AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Story of the Week
Quotes of the Week
Our Only Unstate
Cristoforo Columbo
It's Unique In America
Good Customer for US
Live Easier, Live Longer
What About Those Delinquents?

Story of the Week

Mr. Nikita K. rockets to the planet Mars, where he is conducted through a typical Martian home.

Nick sees a trunk filled with grease-guns, cans of oil, screwdrivers, wrenches, bolts, and an acetylene torch.

"That's my husband's medicine cabinet," informs his hostess. "My man is a hypochondriac."

Quotes of the Week

It isn't necessary to blow out the other person's light to let your own shine.—*Presbyterian Survey.*

Success is unlike a train. Success has no fixed schedule. We never can say that at this time, in this place, we will board it. More important than when and where we board it is recognizing it when we see it.—LOUIS BINSTOCK.

Our Only Unstate

Only 100 miles long and 35 miles wide, Puerto Rico is an American island which combines a wealth of natural beauty with commercial vim and opportunity.

Shimmering orange groves glisten along its coastal plains. Coffee bushes crawl up the sides of conical mountains which look like upsidedown ice cream cones. And in the cities, business enterprises really are busy.

What you see in San Juan's compressed streets reflects Puerto Rico's ancient Spanish heritage of leisurely living, along with its present emulation of the United States in terms of commercial vigor.

Both the Latin ancestry and P.R.'s newer American ties presuppose and prefabricate warm friendliness, incidentally.

In Puerto Rico a tiny indigenous frog sings children to sleep . . . poinsettias grow higher than a man can reach . . . flamboyant century-old trees arch across country roads, and turn them into breeze-cooled cathedral naves.

This reporter was intrigued especially by hearing a Bob

(Continued on Page 10, Col. 1)

Good Service Is The Key To Higher Sales Volume

(Conscience of the Industry Editorial by George F. Taubeneck)

EVERYWHERE you turn both manufacturers and ultimate consumers are plainting that obtaining proper repairs—quickly and satisfactorily—is an annoying problem for owners of mechanical devices for better living.

Is the contractor or dealer who services becoming another "vanishing American?" Not in our book. The best dealers in our nation—and around the world, for that matter—are proud of their service departments. Moreover, they make money with and through them.

To be sure, there are indications of a trend toward centralized service. And some believe that, although service

(Concluded on page 14)

ARW Plans Sales Clinic at Convention; Thom Muir Appointed Executive Director

COLUMBUS, Ohio — Thom Muir has been appointed executive director of Air Conditioning & Refrigeration Wholesalers, it was announced by Charles Koopman, president of the over-200-member association.

Koopman also announced that the headquarter office will be moved from Columbus to Cleveland within the next two months. The location in Cleveland has not been selected.

Muir, for the past 2½ years publishing editor for an industry trade publication, is a graduate of Geneva College. He has served in various executive capacities with the retail, distribution, and manufacturing side of the business.

Koopman, in announcing Muir's appointment, stated: "The association wanted a man with experience in all phases of the business. As wholesalers in a fast-growing industry, there are constant problems arising. Muir's experience will help us to resolve these problems and enable our membership to better serve the industry."

COLUMBUS, Ohio—A three-hour "sales clinic" is one of the features programmed for the 24th annual convention of Air-Conditioning & Refrigeration Wholesalers.

The meeting will be held Nov. 1-2 at the Shelburne hotel in Atlantic City. Manufacturers are invited to attend.

Gordon Nereim, vice president of E. F. Macdonald Co., will get

(Concluded on Back Page, Col. 1)

Whirlpool Bows 1960 Room Units

ST. JOSEPH, Mich.—Whirlpool Corp announced that "three significant engineering developments combine to muffle sound to a soothing purr" in eight new 1960 room air conditioners.

"Two additional achievements — exclusive 'staggered tube' cooling coils and expanded cooling area — reduce operating costs by delivering more B.t.u. per watt input while providing more effective cooling by allowing freer, more penetrative passage of air blown into the room," the announcement said.

L. M. Larkin, general manager, air conditioning division, enumerates the new engineering advancements as (1) a specially designed silencing chamber; (2) "revolutionary" design of full wide air discharge system; and (3) a spring and rubber mounted, quiet-running compressor.

All three combine to reduce sound in the new "RCA Whirlpool" room cooler line by nearly one half, Larkin said.

Noteworthy, too, he pointed

(Concluded on Page 29, Col. 3)

NWAHACA To Meet Dec. 2-4 In St. Louis

'Silver Shield' Progress, Electric Heat Are Topics

CLEVELAND — A documentary report on the progress of the "Silver Shield" program for upgrading heating and air conditioning equipment installations and a discussion of the meaning of electric heating to the warm air heating and air conditioning industry will highlight the 46th annual convention of the National Warm Air Heating and Air Conditioning Association.

Convention will be held at the Chase-Park Plaza hotels in St. Louis from Dec. 2 to 4.

Speakers and subjects for the convention were announced recently by Tom Byrd, NWAHACA president. All talks will be followed immediately by discussion from the floor.

First day of the convention, Wednesday, will be devoted to reports on association achievements and progress.

On Thursday morning will come the report on the development of the Silver Shield program and the discussion on electric heat.

(Concluded on Back Page, Col. 2)

Electric Heat In Central Home Systems—Pro, Con

A decision as to which way electric heat will be generally applied, particularly in residential applications, seems to be facing the industry.

Whether or not electric heat can be used satisfactorily in central forced air systems is the principal point in this debate. Some expert opinion on the future of this matter is presented on pages 22 and 23 of this issue.

BEHIND PAGE ONE . . .

COMMERCIAL Air Conditioning
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Honeywell Plans 75th Anniversary Cooling, Heating Drives

MINNEAPOLIS — To celebrate its 75th anniversary in 1960, Minneapolis - Honeywell Regulator Co. will sponsor 10 advertising and promotion programs aimed at boosting sales of air conditioning and heating equipment.

Cost will be the largest in the company's history for promoting this type of equipment.

Plans were disclosed at a press conference here, which also featured a "sneak preview" of several new products to be introduced over the next few months.

Included in the latter are an electronic air cleaner for residential use and a new low voltage control system for electric heat. (Details will appear in future issues of the NEWS.)

A majority of the "Diamond Jubilee" promotion programs carry forward Honeywell's policy of attempting to increase industry sales as a means of expending its own volume. In previous years, the company has spent many thousands of dollars on similar promotions.

Included in the Diamond Jubilee programs are six aimed at promoting sales of quality heating and air conditioning; one designed to upgrade equipment sales in the commercial-industrial market; a water heater replacement campaign; a 1960 "parade of new products," and an educational program designed to assist dealers to become better businessmen.

All segments of the heating and air conditioning industry are being invited by Honeywell to participate in the programs of direct interest to them.

In launching the company's "Diamond Jubilee Showboat" at the press conference here, H. D. Bissell and K. L. Wilson, Honeywell vice presidents, said the company's industry-oriented anniversary celebration is in keeping with its basic business philosophy.

"Our belief is very strong that the best way—perhaps the only way—for us to advance our own

(Concluded on Page 29, Col. 1)

Plans To Market Home Electronic Air Cleaner

MINNEAPOLIS—Minneapolis-Honeywell Regulator Co. will begin marketing electronic air cleaning equipment for homes in the early part of 1960, it has announced.

The company, which already is producing such equipment for commercial use, sees the home market as offering the "largest sales potential since the advent of automatic heating."

(Concluded on Page 29, Col. 2)

Andrews To Head American-Standard Industrial Div.

DETROIT—Albert O'B. Andrews has been appointed president of the American-Standard Industrial Div. which is headquartered here, it was announced by Joseph A. Grazier, president of the corporation.

Andrews

Andrews succeeds John W. Brennan, who will engage in the engineering and development of the corporation's air conditioning and re-

(Concluded on Page 29, Col. 5)

NEW OFFICERS and some of the directors of the Refrigeration & Air Conditioning Contractors Association (RACCA, national) elected at the recent annual national convention, are pictured here: (l. to r., bottom row) Harvey W. Hottel, Silver Spring, Md., treasurer; Robert S. Lafferty, Miami, Fla., first vice president; T. C. Alexander, Denver, president; Don L. Kissell, Los Angeles, second vice president; Harvey O. Miller, Chicago, director. Back row: Erwin Geiger, Irvington, N. J., director; Joseph A. Marchase, Pittsburgh, sergeant-at-arms; Brooks Reeder, Detroit, director; Walter McCarty, Chicago, recording secretary. Other board members not pictured: Warren Farr, Cleveland; James Scatena, San Francisco; Arthur Palen, Minneapolis; William D. Moody, Houston. As reported in Oct. 5 issue, RACCA passed a strong resolution against long warranties, backed ARI unitary equipment rating certification in another resolution.

Universal Match Completes Purchase of American Air Curtain, A-B Cabinet Div.

ST. LOUIS—Universal Match Corp. here announced completion of the purchase of American Air Curtain Corp. and the Refrigerated Cabinet Div. of Anheuser-Busch, Inc.

American Air Curtain, also in St. Louis, manufactures and installs air circulating systems creating hermetically sealed curtains of air replacing conventional doors. It will be operated as a wholly owned subsidiary. Ernest Gygax, its founder, continues as vice president, according to the announcement.

"The 'air curtains' permit entrances to be open winter and summer without loss of heat or air conditioning," it was noted. "They serve also to facilitate the convenient passage of persons and, at the same time, to bar insects, dust, and wind.

"The Post Office Department has already installed a number of 'air curtains' on loading platforms. One of the first 'air curtains' in the St. Louis area is in operation at Security-Mutual Bank & Trust Co."

Anheuser-Busch's former Refrigerated Cabinet Div. will now be continued as a wholly-owned subsidiary of Universal Match known as Universal Cabinet Corp.

It is expected that this acquisition should add about $5,000,000 annually to Universal Match's volume. Sales will remain under the direction of Elmer M. Moefle as sales manager.

Administrative offices of Universal Cabinet will be located at 3377 Lindell Blvd., St. Louis.

American Air Curtain and Universal Cabinet are the fourth and fifth subsidiaries added by Universal this year.

Worthington Workers Return to Jobs on Contract Extension

NEW YORK CITY — Under provisions of a contract-extension agreement reached recently by Worthington Corp. and locals affiliated with the United Steelworkers Union and International Association of Machinists, 3,400 hourly paid employes returned to work at eight company divisions struck Sept. 15.

The new agreement for a 60-day extension under the old contract covers walkouts at the Air Conditioning & Refrigeration Div., East Orange, N. J., and other divisions at Buffalo; Newark, Harrison, East Orange, and Plainfield, N. J.; Oil City, Pa.; and Wellsville, N. Y.

A joint announcement said the agreement provided the terms and conditions of the contract in force at the time of the strikes will be reinstated and will remain in full force and effect through Nov. 28, 1959. During the extension, efforts will be made to complete negotiations on a new contract.

Keichline Subs for Convalescing Hunt At Drayer-Hanson

LOS ANGELES—During the convalescence of Drayer-Hanson's general manager, Harold T. Hunt — recently confined to Sharpe Memorial Hospital, San Diego, for major surgery—William Keichline has assumed managerial duties at the West Coast manufacturer's administrative offices and plant facilities here.

Keichline, formerly Drayer's assistant sales manager, and more recently assistant to General Manager Hunt, is backed by many years in plant and administrative posts at Drayer-Hanson, it was indicated.

Hunt is expected to return to Drayer-Hanson early next month.

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space in your building

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KRAMER

OUTDOOR COMPRESSOR

Why lose dollar-making storage and selling space to house compressors, when you can now use the Kramer Outdoor Compressor? The THERMOBANK COMPRESSOR SYSTEM is factory assembled, tested and run-in; it saves installation time and money.

The refrigeration industry again finds Kramer blazing a new path with its THERMOBANK SYSTEM—the original and only automatic re-evaporating, non-overloading, fastest hot gas defrost system—now engineered to perform unfailingly, not only in a heated space but in any unheated space or outside at any outdoor temperature.

WRITE FOR BULLETIN TC 406A

KRAMER TRENTON CO. Trenton 5, N. J.

45 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

over...
30,000,000
to see heat pump explained on Du Pont "Show of the Month" TV commercial

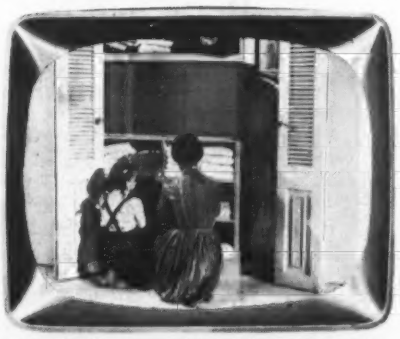
Over 30,000,000 people in 12,300,000 households — your prime prospects — see how refrigeration can heat a home as well as cool it on a 3-minute, between-the-acts commercial!

ON WEDNESDAY, OCTOBER 14, an estimated 30,000,000 viewers will tune in the Du Pont "Show of the Month" presentation of "The Fallen Idol." This popular Graham Greene thriller stars Jack Hawkins, one of England's finest actors, and for 3 minutes, between the acts, Du Pont will explain the heat-pump principle to one of television's consistently highest-quality and largest audiences. This audience is a prime market for products of the air conditioning and refrigeration industry, and Du Pont's commercial is designed to help create confidence and build a better understanding of the heat pump. It is one way Du Pont serves the interests of the whole air conditioning and refrigeration industry. Tune in the Du Pont "Show of the Month", presented "live" on CBS-TV, 8:30-10:00 P.M., Eastern Daylight Saving Time, Wednesday, October 14.

FREON®
premium quality
refrigerants

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

**Freon and combinations of Freon- or F- with numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.*



• Du Pont's commercial explains how manufacturers using "Freon"* refrigerants have brought the convenience of refrigeration and air conditioning to millions. Now, refrigeration is applied in the heat pump to bring consumers a remarkable advance in home heating.

• Viewers learn how the heat pump works to extract heat from the outside air for use in warming every room inside. Because consumers gain a better understanding of the simplicity of the heat pump, they will accept it as a possible method for heating their homes.

• In summer the heat pump automatically reverses itself to transfer heat from inside to outside the house, providing cool, healthful air conditioning. Viewers see how a single, efficient, compact heat pump unit automatically provides household comfort all year round.

• This 3-minute story will be seen in 12,300,000 homes across the country. It should create considerable interest in heat pumps among your potential customers. We feel this will help you build a market for heat pumps.

York Names 5 Representatives For OEM, Mobile Refrigeration

YORK, Pa.—Appointment of five manufacturer's representatives to handle products in the original equipment manufacturer and mobile refrigeration fields has been announced by the York Div. of Borg-Warner Corp.

"This marketing of York built components is a major departure for a firm that has historically used most or all of its production in its own complete systems and products," the announcement said.

For Your Reprint Copy
"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Included in the new sales program will be compressors and condensing units for original equipment manufacturers; York truck refrigeration systems for central automotive distributors, and York automotive compressors for car manufacturers and independent manufacturers of complete automotive air conditioning systems.

Austin Rising, vice president and director of marketing, said the move toward expanded distribution in the OEM field was made possible by the recently completed two-year expansion program at the firm's Grantley Works in York and the addition of the modern new Decatur, Ill., facilities.

Heading up the new sales team will be C. B. Coombs, sales manager for OEM and mobile products, assisted by T. J. Ammel for OEM and P. A. Heber for mobile products.

Coombs said immediate objectives will be to give "broader on-the-spot coverage of automotive air conditioner manufacturers, establish the first national distribution of the York fully hermetic, two-speed truck refrigeration systems, and open up new markets for York's hermetic compressors and condensing units."

The five new district representatives, with two more to be added later, are: Frank Hawk, serving the northeastern states out of New York City: Richard Morrow, southeastern states from Decatur, Ga.; Clyde Webb Co., southwest, from Fort Worth, Texas; William McCullogh, central states from Chicago; and O. J. Kesti, north central states from Detroit.

Dalton Heads Sales for New Welbilt Air Conditioning, Heating Division

MASPETH, N. Y.—Alexander P. Hirsch, chairman of the board of Welbilt Corp., announced the creation of a new Air Conditioning & Heating Div., to be headed by Peter Dalton as sales manager.

P. J. Dalton

Dalton, formerly product sales manager for the Air Conditioning & Refrigeration Div. of Worthington Corp., has been associated with the air conditioning, heating, and refrigeration industry for 26 years, it was noted.

The air conditioning products of the new division are residential air-cooled equipment and air- and water-cooled equipment for industrial and commercial use.

Heating equipment will include gas-fired and oil-fired forced air furnaces, in hi-boy, lo-boy, counter-flow, and horizontal models, ranging from 80,000 to 195,000 b.t.u.

The products of the new Air Conditioning & Heating Div. will be distributed exclusively through franchised dealers and wholesalers, Dalton announced.

"Only those franchised by Welbilt Corp. will be permitted to purchase the division's products," it was stated. "At a later date, a national account department will be formed for the purpose of soliciting national account buyers."

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ALCO EVAPORATOR PRESSURE REGULATORS

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- SODA FOUNTAINS
- BEVERAGE COOLERS
- PRODUCE CASES AND PRODUCTS
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Eliminates tube bursting

ALCO'S EVAPORATOR PRESSURE REGULATORS are designed, engineered and manufactured by ALCO, under ALCO'S HIGH QUALITY CONTROL SYSTEM—to efficiently maintain *evaporator pressure* in either a single or multipal system—*regardless of load changes.*

ALCO EPR VALVES are available from ½" to 6" port sizes and all connections up to and including 6⅛" O.D.F.—FOR ALL REFRIGERANTS.

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Write for Specifications Bulletin #183-57

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- *BUY QUALITY*
- *BUY ALCO*

ALCO VALVE CO.
853 KINGSLAND AVE. · ST. LOUIS 5, MO.

8134

The one complete line of refrigerant controls: Thermostatic Expansion Valves• Refrigerant Distributors
Solenoid Valves · Suction Line Regulators · Flooded Evaporator Controls and Reversing Valves

J. S. Robinson Gets Post With Typhoon

BROOKLYN—John S. Robinson has been named manager of distribution development by Typhoon Air Conditioning Co., division of Hupp Corp.

J. S. Robinson

In making the announcement, John A. Gilbreath, vice president for sales of the division, said the appointment to the newly-created post is part of Typhoon's continuing program to provide its distribution organization with competent assistance in market expansion and product application.

Robinson was formerly director of the Air-Conditioning & Refrigeration Institute's SMAC program, an industry activity to "Sell More Air Conditioning." Prior to joining ARI he was sales manager of heating and air conditioning products, Permaglas Div., A. O. Smith Corp. He also served as assistant general sales manager of the division and in other sales positions in the company.

Falk Talk

DETROIT—David S. Falk will discuss "Electronic Air Cleaning" at a meeting of the Detroit Heating & Air Conditioning Association to be held Wednesday, Oct. 14, at Parkside Hall, 3119 Fenkell Ave., starting at 8 p. m.

Death Notices

DETROIT—James Tyle Gaffield, service manager for Mechanical Heat & Cold, Inc., died here unexpectedly Sept. 24 at the age of 47. Until last spring he had worked for the General Electric Co. here. He is survived by his wife, Irene, and his mother.

* * *

PITTSBURGH — Norman M. Dunning, 57, of Dormont, refrigeration engineer and Tri-State representative for Ansul Chemical Co., died recently in Columbus, Ohio. Surviving is his wife, Cecyle.

Cooling and Heating Million-Dollar Disneyland Submarine Fleet

Air Conditioning Provides Steady 70° Temperature In 8 Subs

LOS ANGELES—Cooling and heating Disneyland's famed submarine fleet, composed of eight "ships of the line" and built for a cost of one million dollars, proved to be a highly important part of the submarine design, according to Recold Corp.

Each of the eight, steel hulled vessels accommodates 38 passengers who sit in perfect, 70°, air conditioned comfort maintained summer and winter with Recold air conditioning and heating coils, the company pointed out.

Passengers View Undersea World

On the trip through the wonderful, undersea world, passengers view sharks, giant manta rays, and sunken treasure ships while traveling through the Lost Continent of Atlantis, by volcanic eruptions and, finally, under the polar ice cap.

"The air conditioning had to provide for an even, comfortable temperature inside the craft both summer and winter as well as being trouble free under continuous use during the peak summer months," it was pointed out.

Moisture Accumulation On Ports Prevented

"Part of this design incorporated a unique system of diffusers to prevent moisture accumulation inside the individual passenger view ports (windows) located below the water line of the sub.

"Each of the 38 view ports has a small diffuser placed in the base of the frame. By 'bouncing' fresh, conditioned air off the insulated glass, moisture is completely evaporated and the fresh air, gently blowing by the passenger's face helps overcome any feeling of being 'closed in.' "

The cooling and heating system designed by J. S. Hamel Engineer, Burbank, Calif., the consulting engineer for Disneyland, is composed of one Recold split circuit coil for direct expansion used in conjunction with two shell and tube condensers, two 2-ton compressors, and one Recold hot water coil.

Coils Located In Conning Tower

Cooling and heating coils are located in the conning tower of the submarine and condensers and compressors are located in the machinery section at the rear of the sub.

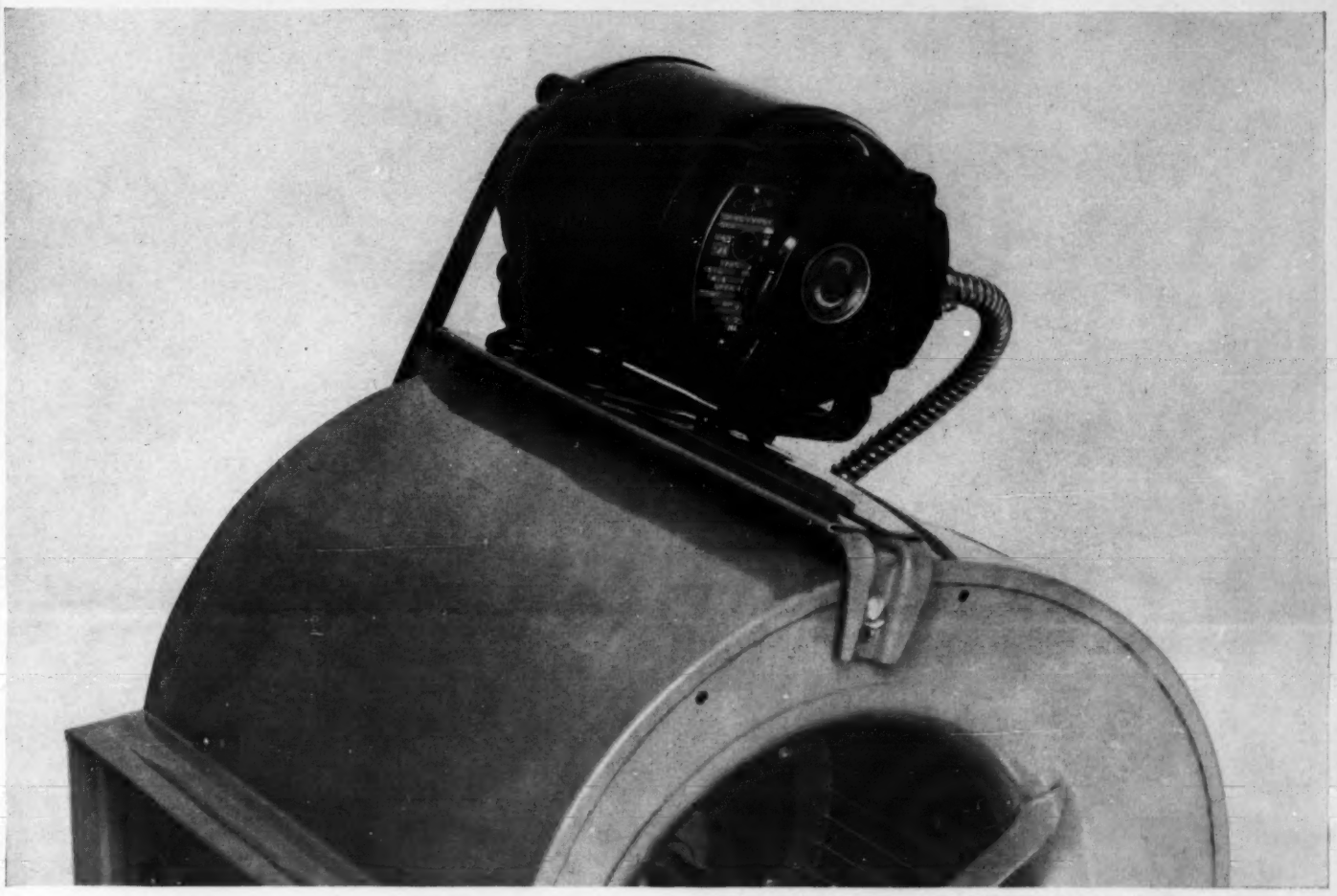
Air in the vessel is recirculated through an activated carbon filter that eliminates all odors and a replaceable media filter to eliminate dust. Since the craft is never completely under water, fresh air is vented into the coils through louvers at the front and top of the conning tower.

H. T. (HY) JARVIS points to the 70° temperature registered on the gauge inside the Disneyland submarine. Two Recold coils, one for direct expansion and one for hot water, are used to maintain the constant 70° F. Jarvis also indicates the unique window diffuser which prevents moisture accumulation inside the individual passenger view ports.

The air conditioning installation as well as the construction of the entire fleet was done by the Todd Shipyard Corp., San Pedro, Calif.

Jack Sayers, director of lessee relations, says the new Submarine Voyage, opened in June, is one of the most popular attractions in operation at Disneyland.

Nearly one million people experienced the wonders of this world of under sea adventure during the first summer that it was in operation, it was reported.



Century Electric fhp motor installed on double entry blower.

Why Century Electric motors give quiet, dependable service

Century Electric motors designed for the air conditioning and warm air heating industry help reduce costly service calls. Here are a few of the features that give quiet, dependable operation.

QUIET BECAUSE cushion base has resilient rings which keep motor from metallic contact with base. Result: reduced transmission of sound vibrations.

QUIET BECAUSE it has sleeve bearings. The shaft floats on a film of oil. You can pull the belt up without getting any bearing rumble.

QUIET BECAUSE rotor bars, end rings and fans are all integrally cast of aluminum. Rotor is dynamically balanced to assure extra smooth operation.

DEPENDABLE BECAUSE lubricating method is designed to withstand warm air furnace operating conditions.

DEPENDABLE BECAUSE insulation consists of bonded paper and "Mylar" slot cells and high temperature baking varnish. Result: high mechanical and dielectric strength.

DEPENDABLE BECAUSE of features like trouble-free governor; automatic thermal overload protection; positive grounding strip on cushion rings and pressure cast aluminum bearing brackets.

Also available: Two-speed motors for combination heating—air conditioning units; and 56-frame motors when half horsepower capacity and larger is required. For more information contact your nearest Century Electric Sales Office or Authorized Distributor.

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Century 59-20

MINERALLAC
HEAVY DUTY & MEDIUM
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Also available without mounting hole for use with gun.

Made of heavier materials! Has exclusive inverted rib, that provides more strength at the bend of clip . . . and, of course, adds the benefits of famous "Snap On" feature! Send for literature.

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Shhhhhhhh!

You'll have to be quiet to hear the new WESTINGHOUSE AIR-LINE MOTOR!

You can hear a pin drop alongside a new, extra-quiet-running Westinghouse Air-Line motor. This new 48-frame shaded-pole or permanent split capacitor motor is the quietest and most failproof motor you've ever used.

So very quiet because a Westinghouse design exclusive, a cushion of oil between nylon washers, *never gives sound a chance.*

So failproof because Westinghouse has eliminated the major source of air conditioner failures by welding and wrapping all electrical connections with multiple windings of insulating tape.

So moisture resistant because Westinghouse builds the entire motor for moisture resistance—with Mylar* insulation, a corrosion-resistant shaft, and double-dipped motor windings.

So much shorter—the shortest motor ever—with perfectly flat end-bells and recessed bolts.

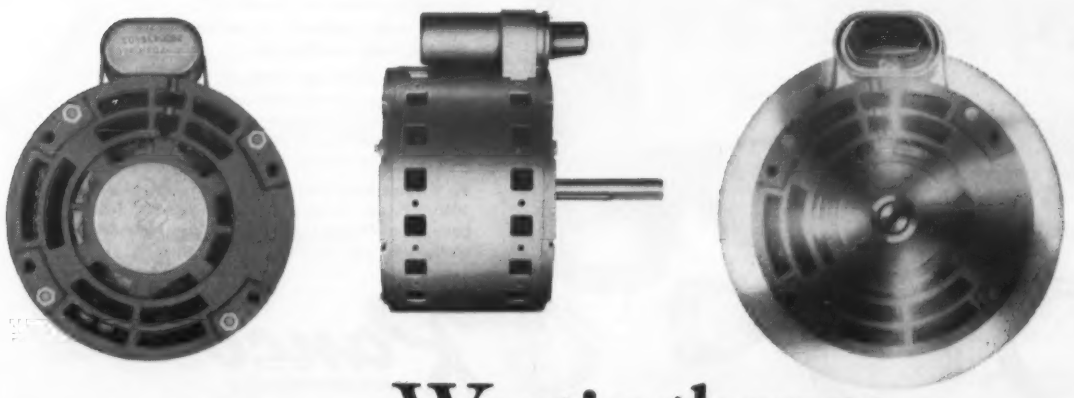
No oiling for five years or more with Permawick lubricating system.

With plug-in terminals or leads depending on your requirements.

Plus dozens of other features that your local Westinghouse sales representative will be proud to show you. Ask him for a demonstration today. Or write to: Westinghouse Electric Corporation, Mr. C. B. Jakes, Industrial Motor Department, Lima, Ohio.

*DuPont registered trade-mark

J-03054-A



YOU CAN BE SURE...IF IT'S **Westinghouse**

WATCH "WESTINGHOUSE LUCILLE BALL-DESI ARNAZ SHOWS" CBS TV FRIDAYS

Von Behren Takes Over G-E Post

LOUISVILLE, Ky. — William P. Von Behren has taken over as general manager of General Electric's Major Appliance Div., which includes the Air Conditioning Department.

Before coming to Louisville to head the Major Appliance Div., he had been general manager of the radio receiver department. Von Behren joined G-E in 1951 as manager-engineering for the small appliance division in Bridgeport. In 1954 he was named a special consultant for the firm's engineering services, and later, a consultant for the management consultation services. He had headed the radio receiver department since 1956.

Von Behren succeeded Charles K. Rieger, who was promoted to vice president of marketing services. In other moves made at the same time, Fred J. Borch, who formerly held the post which Rieger has taken, was named vice president and group executive of General Electric's consumer products group. Borch in turn succeeded James H. Goss, who was named vice president and group executive of a new international group to which International General Electric Co. has been assigned.

ASHRAE Regional Meeting Set for Houston Oct. 23

HOUSTON, Texas — On Oct. 23 the Houston Chapter of the American Society of Heating, Refrigerating & Air-Conditioning Engineers, will be host to other chapter, regional and national delegates and guests at the first regional meeting to be held in Houston since the merging of the two national societies.

Highlight of the group's activities will be the evening banquet for members, guests, and wives, at which the main speaker will be Arthur J. Hess, national ASHRAE president.

The banquet will be held at the newly re-built Houston Engineering and Scientific Society Building; the day activities at the Rice Hotel. The latter include morning and afternoon business sessions and noon banquet.

Local officers of ASHRAE, headed by Hugh D. McMillan, president, include Jim R. Jones, E. H. McLane, Jack B. Buckley, and T. W. Leatherwood. Chairmen for meeting activities are Clarence L. Fleming and J. C. Lewis.

Household Refrigerator Units Excluded

Compressor Shipments by Manufacturers For 5 Months Totaled 2,582,694

WASHINGTON, D. C. — Manufacturers' shipments of compressor bodies during the first five months of 1959, for all uses *except* household refrigerators, totaled 2,582,694 units, compared with shipments of 1,806,180 units in the same period of 1958, it was reported by Air-Conditioning & Refrigeration Institute.

During the first four months of 1959, ARI reported all compressor bodies shipped, including those for household refrigerators, in its monthly statistical report, which brought the four-month total for all types up to 2,552,102 units.

However, it was decided to return to the reporting classifications used prior to 1959, and compressors for household units have been eliminated from the figures, thus accounting for the only-slightly-higher five-month figure than the four-months' shipments reported earlier.

May shipments of compressor bodies totaled 535,778 units, compared with 384,691 in May 1958.

Shipments of compressor bodies designed for automotive air conditioning continued their increase—279,539 in the 1959 five-month period, against 217,788 in the January-May period of 1958.

Breakdown of shipments by size categories, and the names of reporting companies, follows:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES
(Except for household refrigerators)
Shipments Including Exports

*Horsepower	May, 1959	†Jan.-May, 1959	Jan.-May, 1958
⅙ & under	66,755	312,774	486,996
⅓			
¼	137,530	666,088	
⅓	24,222	128,405	86,074
½	13,430	64,193	103,291
¾	10,580	42,051	33,613
1	132,156	580,740	438,456
1½	26,424	150,078	150,282
2	33,108	202,453	176,287
3	16,450	70,273	53,451
4 & 5	10,354	50,846	32,623
7½	3,976	19,506	15,459
10	1,571	6,774	4,646
15	694	3,056	1,971
20	172	792	800
25	262	1,040	753
30	197	817	709
40	212	863	732
50	140	605	560
60	86	460	409
75	78	311	307
100 & over	48	221	198
Total	**478,445**	**2,302,346**	**1,587,617**
For Auto A-C— Total	57,148	279,539	217,788
For Ammonia— Total	185	809	775
Grand Total	**535,778**	**2,582,694**	**1,806,180**

Reporting companies: Airtemp Div.; Bendix-Westinghouse; Brunner Div.; Carrier Corp.; Copeland Refrigeration; Curtis Mfg. Co.; Frick Co.; ‡Frigidaire Div.; §General Electric Co.; Kelvinator Div.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co.; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div.

*For all refrigerants except ammonia (excluding units for automotive air conditioning).

†Includes revised data reported to ARI.

‡Report includes units for automotive air conditioning only.

§Report includes unit for unitary air conditioning only.

This summary includes all compressor bodies shipped by the reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerators). Shipments for export are included. Shipments for household refrigerators are **not** included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

NOTE: In order to avoid disclosing the figures of individual companies, some data for two or more sizes are combined on ARI summaries.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Ranco Offers NEW COMMERCIAL CONTROLS for you to specify...

New Double Pole "O" Type Switches

Have wide product application for commercial refrigeration and air conditioning equipment

New double pole, single throw "O" Type Commercial Controls by Ranco are designed for a variety of two pole switching jobs—provide a double break for single-phase operations, simultaneous switching of two circuits, or switching two lines of a three-phase circuit. Available in Single Unit Models for low pressure, high pressure and temperature; and in Dual Models for dual pressure or dual temperature. Controls handle one, two and three-phase motors of ½ through 5 hp capacity. Safety (High) limit stop may be added to the range screw on the high pressure side of a Dual Pressure Control, or to a Single Unit Control that cuts out on rise in pressure or temperature. Contact your local Ranco wholesaler —or Ranco Incorporated, Columbus 1, Ohio, for more details.

020 SINGLE UNIT CONTROL (Above)
Standard switch action. Contacts open on decrease in pressure or temperature.

021 SINGLE UNIT CONTROL (Not Shown)
Reverse switch action. Contacts open on increase in pressure or temperature.

Manual reset is available on both 020 and 021 Single Unit Controls.

022 DUAL UNIT CONTROL (At Left)
Combines high pressure with either low pressure or temperature. Both sides operate automatically—or manual reset may be added to either high pressure side only, or to both low and high pressure sides.

To Servicemen: Procure Ranco Service Manual No. 1660 from your Ranco wholesaler. It lists "O" Series Controls; covers nearly 5,000 other Ranco replacement applications. *(Not available from the factory.)*

Ranco® INCORPORATED
COLUMBUS 1, OHIO

Visit RANCO Booth 312 • November 2-5 • Atlantic City • ARI Convention

Climate by Chrysler

...your customers would pay up to $364 just to get the standard "extras" alone

If your customers had to buy all the valuable extra features that are standard only on Chrysler packaged air conditioners, they'd have to pay up to $364! Here's what they'd get:

1. **Light load capacity control.** Brings down humidity rapidly and economically when outside temperatures are moderate.
2. **Electro-magnetic safety controls.** Increase the service life of their air conditioning equipment. Protects their investment.
3. **Mild-weather control.** Keeps equipment running on mild days when others fail . . . an added comfort bonus.
4. **Quick-response expansion valve.** Provides fast cooling, brings steady supply of conditioned air in only 30 seconds. Cuts operating costs and wear on parts.
5. **Oil rectifier.** Cleans and purifies the system's lubricant; protects against condensation; prevents service breakdowns.

With Climate by Chrysler, you offer customers more than just coolness for their air conditioning investment. Exclusive features, lower installation and operating costs are but a few of the sales advantages that help you sell more . . . and profit more. Get the full story from your local Chrysler Distributor. Or write: Airtemp Division, Chrysler Corporation, Dept. H-109, Dayton 1, Ohio. Canadian Distributor: Therm-O-Rite Products, Ltd., Toronto, Ontario.

CHRYSLER AIRTEMP

FIRST WITH THE FINEST IN AIR CONDITIONING

SEE OUR EXHIBIT
11th EXPOSITION
AIR-CONDITIONING AND REFRIGERATION INDUSTRY
ATLANTIC CITY, N.J.
NOV. 2-3-4-5 1959
BOOTHS 335-339

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)

White bird carol "bob white" underneath his bedroom window nightly. Nostalgia! Hadn't heard that sound since boyhood days in Marshall, Illinois.

All at the same time, there's bustling business and industry going-going here.

Cristoforo Columbo

Christopher Columbus discovered this "Rich Port" (literal translation from the Spanish for San Juan) in 1493.

Iberian immigrants, sponsored by Ponce de Leon (who also explored Florida in search of a "Fountain of Youth") arrived several annums afterward.

Four hundred years later Luis Munoz Rivera, the "George Washington of Puerto Rico," bulldozed a Charter of Autonomy from Spain which gave this succulent Caribbean isle its first *soupcon* of independence from foreign *conquistadores.*

Came then Spanish-American War. U. S. Marines landed at Guanica in July, 1898, and soon "had the situation well in hand." Thereafter Puerto Rico passed from Spanish to United States sovereignty real quick-like.

Eventually all Puerto Ricans became American citizens, thanks to a 1917 act of Congress.

Dramatic development of agriculture, broadening of the public education system, and beginnings of a public health program accompanied U.S.A. assumption of responsibility for P.R.

Joyously thereafter these people overbred—which resulted in serious unemployment. Too many people, too few jobs. No wonder Puerto Rico became known as "the poorhouse of the Caribbean."

Recently things have changed for the better. The U.S.A.'s only "unstate" has become a praiseworthy laboratory of economic and social development—a free enterprise example for other less-developed areas of the world.

Truly, it is a showcase of American democracy in action.

It's Unique In America

Today Puerto Rico is a self-governing "odd appendage" of the United States—a community of 2,317,000 citizens of our Federal Union (by legal compact and mutual consent). P.R. is not a state yet—but could be if some local desires are translated into Congressional action.

Creation of the unique Puerto Rican Commonwealth honors the best American traditions of political inventiveness, human liberty, and belief in free enterprise.

Its dynamic effort to diversify, and to develop a self-supporting island economy, is going great.

More than 750 modern manufacturing plants dot the landscape, and new commercial enterprises are erupting or settling here at a rate of twice or thrice weekly.

Manufacturing has outstripped agriculture as the leading source of wealth, and a thriving tourist industry has developed, also. (Castro recently gave it a shot-in-the-arm. People who used to vacation in Cuba now go to P.R.)

What makes "Operation Bootstrap" really work smoothly is Puerto Rico's dedicated Economic Development Administration (usually slanged: FOMENTO).

Its field salesmen go forth breezily to describe Puerto Rico's investment opportunities and pleasant living conditions to anybody who'll listen.

They call on manufacturers, bankers, insurance companies, labor unions, hotel management firms, home builders, supermarket and department store operators, wholesalers, and distributors.

These FOMENTORS answer questions about labor, materials, transportation, taxes and tax incentives (most new manufacturing, commercial, and tourism enterprises can qualify for exemption from local taxes for 10 years).

Also, these P.R. salesmen will undertake economic studies, locate plant sites, and arrange for the construction or alteration of factory buildings.

They help "little business" obtain loans from private or government banks. They provide engineering and marketing assistance to fledgling enterprises, and even assist "the Generals" (elephantine stateside corporations).

Good Customers for US

Thanks to its steady economic growth and rising standard of living, Puerto Rico has become a foremost customer for U.S.-made products.

Since 1949 Puerto Rico's purchases from "the mainland" have soared from $300,000,000 to more than $840,000,000 last year.

On a *per capita* basis Puerto Ricans buy more from the U.S.A. than any other overseas customers—more even than Canadians, Germans, Venezuelans, Australians, and residents of the British Isles.

Along with exciting recrudescence of local manufacturing and tourism, impressive progress in agriculture, forestry, and fisheries has been registered.

The hungry tourist trade in itself is providing expanding markets for dairymen, beef and poultry raisers, and for growers of fruits and vegetables.

Puerto Rico's home-grown acerola plant, for instance, has a Vitamin C content 80 times greater than that of orange juice. You'll be hearing—and seeing—more about this entrant in the supermarket shelf-race in the near future.

Further good news for American investors:

Puerto Rico's forests are expanding again. And its surrounding ocean waters toss cocktail-size oysters, succulent langouste and shrimp, along with fine food fish (snapper, kingfish, and tuna) into posh restaurant kitchens from New York City to New Orleans.

For sporting fishermen, it can be added, there are sailfish and giant blue marlin alongside.

Live Easier, Live Longer

Impressive is the rise in the P.R. average life span (from 46 years in 1940 to 68 years today) and the low death rate (even smaller than that of the continental U.S.).

(Concluded on next page)

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from preceding page)

You see, along with commercial opportunity, there's GOOD LIVING opportunity here.

Punctuating the coasts and mountains are healthful resorts, easily reached by paved roads which quickly leave flat sea vistas to climb into the sky.

At La Parguera, on the southwest coast, you'll find a phosphorescent bay where the sea glitters like a submerged Times Square under glass.

And in Mayaguez you can view and unequaled collection of tropical plants, including lily pads the size of cartwheels.

These are but samples of the fabulous relaxacisors available in this Caribbean Sea jewel.

Hospitality, generosity, and the democratic way prevail. That "life, liberty, and the pursuit of happiness" goal embodied in the Declaration of Independence is admired here.

Accent is on the Pursuit of Happiness.

More money for everyone simply is a means to that desirable pursuit.

To help advance CULTURAL happiness the Puerto Rican government has launched a project designated: "Operation Serenidad."

Restoration of old churches, historic houses and forts, and the rediscovery and broadcasting of folklore and native music are collated under its banner.

What About Those Delinquents?

Presently some 650,000 persons of Puerto Rican birth or parentage huddle in the slums of New York City. Hoodlumism of these "what are we doing here?" teen-agers has alarmed all of us. What gives?

Well . . . these Puerto Ricans have to start at the bottom of the ladder, and must try to accept the poorest sort of housing and social status in teeming, steaming N.Y.C. They're the "left outs."

Furthermore, they are forced to adjust to sudden changes in customs and climate and language. That they rebel against unexpected inferiority feelings which these sudden changes produce should be understandable—even if unforgivable.

However, the picture is not entirely black.

Doctors, lawyers, merchants, architects, legislators, actors (Jose Ferrer), actresses (Rita Moreno), and big-league ball payers (Ruben Gomez and Minnie Minoso) have come there to here with distinction and pride.

Home-grown "get well" programs for these immigrants—to aid their chances for steady employment, readjustment, and education—are being conducted by the Migration Division of the Puerto Rico Department of Labor—which has offices in 11 U.S. cities, and which also has established an Office of Orientation in Puerto Rico.

Possibly this is the first time in world history when officialdom of an area from which people are migrating has done a job of this sort.

For the present, New York City's police and social workers still have a problem with these "fish out of water."

For the future, good hope, all around.

One place where "sweet talk" doesn't help!

There are places where the very law of gravity seems to be repealed—and also times when a soundly engineered installation just doesn't work right.

The most earnest explanation of Btuh capacity and comfort calculations falls on deaf ears. If the customer isn't happy—what then?

Lennox dealers—because of their partner-like relationship with the nearby factory—have ready access to specialized help. Trained factory engineers are "johnny on the spot" to help you *off* the spot—for Lennox values customer satisfaction as much as you do.

This is the kind of backing that counts . . . the personal, *practical* working together that builds sales and makes salesmen out of your customers. If you don't have this profit advantage, it's time to get in touch with your nearest Lennox factory.

LENNOX *World leader in indoor comfort for home, business, schools*

Lennox Industries Inc. founded 1895 • Marshalltown, Iowa • Columbus, Ohio • Syracuse, N.Y. • Fort Worth, Texas • Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa • Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

Pilot Course Ends

PHCIB Prepares For Nationwide Sales Training

DUBUQUE, Iowa — The Plumbing-Heating-Cooling Information Bureau completed the final session of the pilot run of its initial sales training program recently here, and the course is now being prepared to be put to work in all parts of the country.

This was the announcement of Howard L. Spindler, president of the PHCIB, at a reception and banquet held in Dubuque honoring the contractors who are the first graduates of the course.

G. Allen Briggs, Detroit, second vice president of the National Association of Plumbing Contractors, was also a speaker at the dinner, as was John M. McDonald, Jr., president of the Central Supply Association.

Spindler described the PHCIB's first "Train the Trainer" course, expected to take place before the end of the year. It will prepare the first group of industry instructors to conduct the sales training course in their communities.

Within the next several weeks, the bureau will invite its members to send a representative to attend this week-long training course. While the bureau intends to hold classes to 15 students, it plans to conduct one each month or as required to accommodate the wholesaler and manufacturer representatives, state and local association personnel, and others who are logical persons to conduct the sales training course locally, it was noted.

"The result," Spindler said, will be training of an ever-growing nucleus of selling contractors."

Nashville Distributor Starts 100% Expansion

NASHVILLE, Tenn. — James H. Winters Co., 210 Main St., engaged in the heating, sheet metal, and roofing business here for 23 years, has purchased property at First and Woodland Sts. for a 100-plus per cent expansion.

Winters said buildings at the new location will be enclosed with a modern front, renovated, and altered to suit the business, which now includes the distribution of Westinghouse air conditioning units.

CORRECTION

Refrigerator Sales Were Too, Up

Total industry sales of electric household refrigerators in the first seven months of 1959, as reported by the National Electrical Manufacturers Association, were higher than in the corresponding period of 1958.

A typographical error in a story in the Sept. 28 issue indicated the opposite. The correct figures are 2,237,100 units sold in the January-July period of this year, compared with 1,764,700 in the first seven months of 1958.

Anderson, Ind. Code Gives It a Try

Making Electric Heat Contractor Legally Responsible For Insulation Seen Reducing Customer Dissatisfaction

ANDERSON, Ind. — Making the electric heat contractor legally responsible for adequate thermal insulation of the structure may have contributed to forcing a couple contractors out of business here, but the total effect has been to eliminate consumer dissatisfaction with electric heat after installation—a problem frequently encountered in other areas of the country.

This is the consensus here among knowledgeable persons who discussed the Anderson code requirement with the NEWS.

As it stands, the code holds the installing contractor responsible for adequate insulation, whether he puts it in or whether he allows the builder or some other contractor to handle insulation.

In the few cases where later inspection showed that insulation was inadequate for electric heat, the heating contractors were forced to correct the situation to the satisfaction of the local utility and city inspectors.

The code specifies that insulation must meet requirements "as specified by the engineering department of the electric utility." Responsible persons who pass an electric heating examination place a $1,000 surety bond and obtain a limited electric heating license. The license is not restricted to master electricians, but is available to any one who can pass the examination and meet normal responsibility qualifications.

Discussing the code, William Sparks, chief engineer and assistant superintendent of Anderson Municipal Light & Power, admitted that the fact that the local utility is city-owned helped in passing the code requirement concerning the legal responsibility for insulation.

"As it has turned out, however, there have been no serious objections to the code," Sparks commented. "And electric heating jobs are performing satisfactorily—even during this past cold winter."

The Anderson utility has some 150 electrically heated homes on its lines, and promotion of electric heat began in January of '58. A school is going all-electric.

Houses are being offered at the same price whether the buyer chooses electric or conventional heating; fireplace and chimney are supplied in either case.

While Sparks neither confirmed nor denied the statement, others in Anderson hold that the success of the code has been directly due to rigorous inspection by utility personnel.

"Even on existing structures, where inspection is customarily performed in a casual manner in other cities, the utility guards carefully, going so far as to be present when the insulation is being installed in some cases," stated one authority.

For the present, insulation requirements for heat pumps will be the same as for electric heat, Sparks offered. In confirmation of the validity of such requirements (nominally 2, 4, 6 in. in floor, wall, ceiling) he offered some typical case histories:

1,648-sq. ft. brick veneer, with basement. G-E Weathertron. Yearly heating-cooling cost—$296, of which $96 goes for cooling;

similar home with water-to-air unit (Typhoon)—$185 yearly operating cost;

an 1-800-sq. ft. home, air-to-air—$332 year-round operation;

a church using three water-to-air units—$550 operating cost.

Waterloo Register Names Nemmers as General Sales Manager

WATERLOO, Iowa—Appointment of Richard E. Nemmers as general sales manager of Waterloo Register Co., Inc., has been announced by E. T. Kelly, president.

R. E. Nemmers

Nemmers, who previously served as assistant sales manager, has been with the company since 1953. Before joining Waterloo he was a member of the Sales & Marketing Div. of Gulf Oil Co.

Cast Iron Boiler Sales Up 17.7% For First 6 Months

CHICAGO—Sales of cast iron boilers during the first six months of 1959 showed a gain of 17.7% over the corresponding period of 1958, according to statistics compiled by the Institute of Boiler & Radiator Manufacturers.

During the first half of 1959, a total of 79,091 cast iron boilers were sold as compared with 67,171 during the same period of 1958. Of all boilers sold, 97.5% were automatically fired in 1959 as compared with 94.5% in 1958.

The number of hot water boilers are compared with steam remained relatively constant. A total of 80.8% were hot water in 1959 as compared with 80.2% in 1958.

The Plumbing-Heating-Cooling Information Bureau here attributes the sharp upward turn in boiler sales to new developments which have increased the public demand for hydronic heating. Among these are baseboard heat, panel heating, automatic heating, indirect heating of domestic water with the house heating boiler, and packaged boilers, the bureau noted.

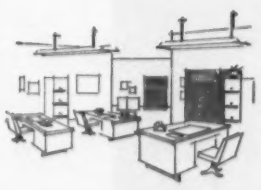
OUTDOOR SECTION includes a compressor, coil, fan and electrical control panel all in a weatherproof cabinet.

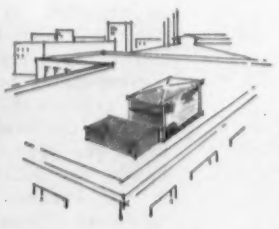
Capacities: heating—91,000 btu/hr
cooling—7.5 tons

INDOOR SECTION includes fan and fan motor, heating-cooling coil, filters and one 11.4-kw strip heater assembly with its own overload protection. Accessory thermostat provides for automatic or manual change-over from heating to cooling.

One unit can completely air condition a small store, shop or office suite.

Multiple installations provide zone control for the largest buildings.





Completely weatherproofed, both units can be safely installed outdoors.

Carrier scores again with this

versatile new air-cooled Heat Pump Weathermaker

for business and industry!

Here's the latest in the Carrier line of heat pumps—the new 64D8 air-cooled Weathermaker*. This new model fills the need of commerce and industry for a heat pump that combines compactness, versatility of application and attractive appearance. Under many conditions, it offers an economical solution for heating and cooling even in colder climates!

A single 64D8 will provide efficient year-round air conditioning for a small store or office. In multiples, it can provide excellent zone control even in the largest buildings. The versatile indoor section may be suspended horizontally or vertically. Vertically it may be hung from a wall or stand on the floor. It may be used with ductwork or with a plenum. Where floor and wall space are limited, it may even be installed outdoors.

Some of the ways a 64D8 can be used are shown here. There are many more. For the complete picture, call your Carrier dealer listed in the Yellow Pages. Or write Carrier Corporation, Syracuse 1, New York.

*Reg. U.S. Pat. Off.

MORE PROOF OF
BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE
Carrier

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

Helpful Hints on:

Flare Fitting Copper Tube

By Arthur I. Heim, Research Director, Copper & Brass Research Association

Flared joints in copper tube are widely used for underground lines, where wet conditions might make it difficult to solder joints. Some contend that certain soil conditions will attack the solder in soldered joints, but this has not been definitely established.

Flared joints are also used for inside installations, although they are prohibited by some codes in partition walls. In other areas, when flared joints are used in partitions, it is frequently required that they be tack-soldered to prevent loosening under vibration. Flared joints may be indicated where flammable conditions may prohibit use of a torch.

Flare fittings can be used only with soft-temper copper tube. Soft-temper tube should be supported at intervals of 16 to 24 in. in horizontal lines as contrasted to hard-temper copper tube which is supported only at 6 to 10-ft. intervals. Prices of flare fittings, moreover, are apt to be considerably higher than comparable sweat fittings. For some installations, nevertheless, flared joints may be the most logical and economical choice for the plumbing and heating contractor.

The first step is to uncoil the tube if it is obtained in coils, as is usual. Then, as in other methods of fitting copper tube, the length-of-run is measured off carefully. The tube should be cut squarely, generally with a tube cutter. Because soft tube is fairly flexible and, where straightness is of minor importance, tube that is slightly too long can be fitted. But in general, once a tube has been flared there is not much chance of making an adjustment to length.

Removal of burrs after cutting the tube is very important. If burrs are not removed, the flared end of the joint will not be seated uniformly when the joint is assembled, and small cracks which will cause leakage may develop where the burr is in contact with the fitting. The reason for this is that the burr is cold-worked and hardened during the flaring operation, and the stretching causes tiny cracks through the burr. This may lead to leaks, and the jet action of the leaks can cause perforation through the wall of the tube.

The coupling nut is slipped over the end of the tube before flaring begins. A flaring tool to fit the tube size being installed is driven fully into the tube. This operation is speeded with a few drops of oil on the shank of the flaring tool. The soft-temper tube may be slightly out-of-round after uncoiling. foreign matter that may have lodged there before assembly of the fitting. Use of a little oil on

and around the flared section of the tube will ease the shaping of tube to the fitting.

(A future issue will carry an article by the author on brazing copper tube.)

Norge Sales Up

CHICAGO—Factory sales of Norge home appliances rose 25% above August of last year and sales to dealers climb upward, according to Judson S. Sayre, president of the Norge Div. of Borg-Warner Corp.

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry.

Q. I am in need of as much information as I can obtain on noise and sound control. I have noticed many articles in the NEWS on this subject and wonder if you can direct me to more information or sources.

A.P.—Montebello, Calif.

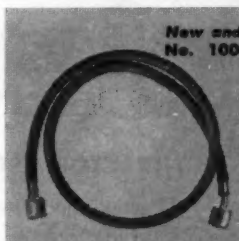
A. The study of sound and noise control in the air conditioning industry is very interesting, but admittedly just begining to become scientific.

Your best source of information for whatever science now exists would be the companies mentioned in the articles you have already read. The several air conditioning and refrigeration handbooks generally have a chapter on noise. These chapters, in turn, contain extensive bibliographies. Page 274 of the 1959 Air Conditioning and Refrigeration Directory contains a list of manufacturers of noise absorbers from whom you should be able to obtain information.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

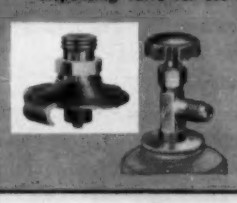
Place your ad today!

NEW AND IMPROVED IMPERIAL PRODUCTS



New and more flexible! **No. 100-FT Flex-King Charging Line with Kwik-Kupler End Connections.** Knurled nuts for easier tightening! Confined packing, Buna N lined, 36" long.

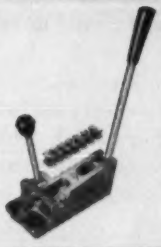
New, a pleasure to use! **No. 352-C Charging and Testing Unit** is built with the service man in mind. Lightweight forged body; ample clearance on wheel handles. Compact.



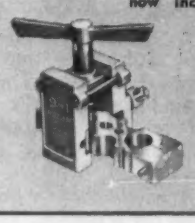
New Adapter No. 330-C adapts Imperial No. 330-C Tap-A-Can Refrigerant dispensing valve for use on Can-O-Gas. **No. 330-C Valve fits Charge-A-Can without adapter. Valve and Adapter are reusable.**

Improved Piercing Valve! **No. 341-C** can be used on 4 sizes of tubing—3/16, 1/4, 5/16, 3/8" O.D. Taps line at any point. Activating nut is integrated with "V" block — cannot be dropped or lost.

New Freon Hose and Attachable Couplings! Easy to make up lines to required lengths, with desired end connections for F-12. Hose has heavy-duty innertube, reinforced cotton braid cover . . . minimum permeation. Hose supplied in coils.



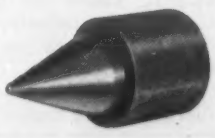
New Production Flaring Tool. Makes flares in less than 4 seconds! Flares 6 sizes of soft copper, aluminum and brass tubing. 3/16, 1/4, 5/16, 3/8, 1/2 and 5/8" O.D. Portable, self-gaging. No. 555-F (45°).



New 9-in-1 Flaring Tool now includes famous Rol-Air feature — rolls flares in the air, automatically burnishes, too! Flares 9 sizes of tubing. 1/8" to 3/4" O.D. It's 37% lighter than comparable tools. Ask for No. 900-FA.

Improved "Magic Eye" Liquid Indicators now with plastic protection cap for glass keeps out dirt. Magic Eye tells you when to charge the system. Flare connections for 1/4" to 1/2" O.D.

"Magic Eye" Liquid Indicator with Copper Tube Extension. No need to disassemble when soldering into line. For 1/8" to 2 1/8" O.D.



New 414-SK or 414-SL Sizing Tools for rerounding Type K and Type L tubing. Used before soldering or before flaring collapsed or out-of-round tubing. 8 sizes — 1/2" through 2 1/8" O.D.

New 406-F 2-to-4 Hi-Duty Adjust-O-Matic Tube Cutter has quick, slide-to-size adjustment. For cutting copper DWV and other copper, aluminum and brass tubing: 2 1/8" to 4 1/8" O.D.

Improved Diamond Valves in 3-way, 2-way and angle types are 3/5 the size of ordinary valves. Flare and solder connections, Teflon diaphragm. For 1/4" to 7/8" O.D. tube. Copper tube extensions on solder type permit soldering into lines without disassembly.

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Here are more examples of Imperial's *continuous* new and improved product program to help you install new equipment more quickly, easily, efficiently. These trouble-free jobs save your profit by eliminating costly call-backs — pave your way to *extra* repeat business!

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by

Jimmy Hatlo

NO INCOME TAX IN THOSE DAYS···YOU COULD TAKE A GIRL TO SUPPER AND A SHOW AND ONLY SPEND A DOLLAR AND A HALF···A GOOD OVERCOAT COST TEN OR TWELVE DOLLARS-A FELLOW COULD START HIS OWN BUSINESS ON A SHOE-STRING···WE REALLY LIVED IN THOSE DAYS···
NO WAY TO PUT ANYTHING BY FOR A RAINY DAY··· AND THERE AREN'T THE OPPORTUNITIES LIKE THERE WERE IN THE OLD DAYS-
BUT LET SOMEBODY ELSE SING THE SAME TUNE, AND DUFFLE DOES A RIGHTABOUT-FACE ····
WHAT ARE YOU TALKING ABOUT? YOU DON'T KNOW HOW LUCKY YOU ARE··· YEARS AGO WE DIDN'T HAVE HOSPITALIZATION OR SOCIAL SECURITY···NONE OF THAT STUFF! THINK OF THE BIG SALARIES EVERYBODY GETS TODAY! EVERY KID HAS A COLLEGE EDUCATION! WHY, IN MY DAY WE HAD TO WORK SUNUP TO SUNDOWN ····
9-10
DUFFLE, THE OFFICE OLD-TIMER, IS ALWAYS WAXING NOSTALGIC ABOUT THE GOOD OLD DAYS ····

Good Service Is the Key To Higher Sales Volume

(Concluded from page 1)

by dealers always will be required in rural areas and small cities, factory branch agencies eventually may do much of the service in our larger metropolitancies.

Those who think this way point toward thousands of dealers and hit-run contractors who have abandoned the service function. Discount houses, for example. Figures supplied by a major trade association indicate how the service picture is changing:

Prior to 1954, three-fourths of its members answered all service calls. Only about 50% do so now. One good reason—there are so many fly-by-night "two-bit" dealers and contractors who exist on unkept promises and cut prices.

Poor service—or lack of service—is one of the things which causes formerly satisfied customers to switch to another brand. There is plenty of evidence that "repeat" customers rate service ahead of all other factors, including price.

One attraction of centralized service is that it's a money-maker for the big dealer or distributor. Consider this comparison made by one manufacturer:

If each of its 100 Chicago-area dealers had its own service department, every dealer would have to hire an average of three servicemen. This would mean a total of 300 repair men in the area to take care of that manufacturer's business.

Centralized service might require only 100 trained men, in contrast, and might be more reliable.

Another manufacturer figures the servicing costs of an independent dealer amount to 3.3% of sales volume, against 1.9% for a centralized operation operated by a branch or distributorship.

There is a trend not only to centralized servicing but also, in some cases, to centralized warehousing.

Eventually, it has been predicted, these warehousing centers will make it unnecessary for retailers to hold inventories beyond three months. Other manufacturers flatly declare that all this is a pipe dream.

Is the day coming when the dealer will pass along a customer's order to the central distribution center which will then ship the product directly to the customer?

We doubt it. Since service costs wouldn't be included in the dealer's part of the retail price, dealer markups would be reduced. Moreover, service profits would be eliminated —likewise repeat business from happily satisfied users.

Just how extensive centralized servicing —and warehousing—eventually may become, no one knows for certain. But the trend to centralization surely is significant, and something which warrants the close attention of all concerned.

In the meantime, those locally strong distributors and dealers who maintain adequate service departments are being cultivated by every manufacturer in our business.

They OWN their territories, and their "repeat" customers.

Frankly, some think that centralized warehousing and servicing have arisen because of panic on the part of a few manufacturers.

Stung by sharp criticisms of repair work in newspapers and national magazines, they've pushed the panic button and resorted to a quick "solution" of the problem, i.e.:

Papa will take care of his family.

Long-run, this essentially bureaucratic solution to highly personal problems won't work.

Why? Because the "children" (users) are too many; and because Big Daddy (giant corporation) is too impersonal.

Service is vital to users. It is *personal.* The contractor or dealer who offers it is a "friend-in-need, a friend indeed."

He receives, in return, consumer loyalty, repeat business, and continuing profit stability

---

The trouble with prosperity is that after we have had it for a while we take it for granted. We forget what created it. There comes a terrible temptation to think we can have it without working for it—without going through all the painful steps of self-denial, saving, investment, risk, and experimentation that are its real foundation. We begin to take the golden eggs for granted and to ignore the care and feeding of the goose.—G. KEITH FUNSTON, President, New York Stock Exchange.

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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CONTRACTOR LISTS THREE NEGATIVES IN INDUSTRY

Pacific Air Control
Merced, Calif.

Editor:

I cannot leave the letter written by Nat Leas pass without adding my comments. I know Mr. Leas only casually but agree with him whole heartedly.

As one of the "spiny" ones and having closed a sizable mechanical contract shop in the face of these unreasonable and sometimes unlawful demands, I have some suggestions and comments.

Other letters have been written and we sub-contractors are alternately told we do not know how or can't sell the merchandise—we don't know how to cost a job—install cut quality or chisel jobs as a matter of policy.

I would like to give our position for a change, as this writer sees it. There are three negatives in our industry.

(1) Unionism as practiced today.

(2) Wholesalers and manufacturers who traffic their products to unauthorized dealers, building contractors, and other individuals.

(3) The building contractor who while using your money and credits to build, will try to chisel your job to sub-standard and your profit to less than nothing.

These negatives to business are outside your sales ability, your costing setup and detailed day by day business management. Perhaps these three groups take the "sub" in subcontractor literally.

In the first instance—unions. While the efficiency has fallen off the hourly cost has skyrocketed. Each sub-contractor is handed a contract annually. He has the choice of signing it or being closed out by state law and civil action due to noncompletion of contract.

Labor unions should be notified by common contract agreement stoppage by one trade due to contract termination or disagreement will halt all work in this particular area, so that the effected trade is not covered up

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by building progress or forced to sign any contract which is against the common good of the Union of Sub-contractors. These trade unions honor each others interests, why can't we?

We have many cases when the work of one minor sub-contract will hold up payment on all the others for months. We sub-contractors should be using a common form contract which will determine and guarantee our progress payments and the general contractor should not get *our* money to divert to some other job—particularly on unbonded contracts.

This could be counteracted by forming a state-wide or large area Union of Sub-contractors (not individual trade associations who spend more time fighting each other than their common problems). All sub-contractors, whether he be a brick layer or a plumber, have the same basic problems. This Union of Sub-Contractors should accept work only on their terms of credit, union conditions and price. The general contractor and structure owner or agencies would be made aware of the fact that on accepting the sub-contract, that the sub-contractor would not be financially or morally responsible for work stoppage due to labor strikes, credit terms, or when progress payments are not being made on time, etc.

The wholesaler and manufacturer are in many cases directly responsible for the depressed price situation. We are getting as much as $700.00 less for a 3-ton furnace-air conditioning combination than we were in 1952, largely because wholesalers have sold direct to the builder at wholesale prices and often less than dealer prices, and lately they have given their lines to cut rate furniture stores to broker to the builder.

We in California must be licensed to take these contracts, but a general builder will hire by the hour or day someone to patch in the tin and blacken our trade further.

I suggest in our case, if we must operate by license within the law, that the manufacturer and wholesaler be bound to sell only through licensed outlets.

This Union of Sub-Contractors should be so organized, that all complaints and corrective measures be published in weekly news form with a ballot to vote pro or con without having a meeting which are never attended. A voting system should be used to make the wishes of the individual contractor known. Small Business Association used this system to indicate the pro and con vote of their members on Federal bills affecting them. A similar system could be even more effective by bringing like action at state and local levels.

So much could be said on what is wrong with our sub-contractor position that it would surely fill a book, but I believe from my own experience, the customer, the banker, the wholesaler, the general contractor, and the good and honest labor officials, would be happy to cooperate with a financially strong ethical group with the guts to state our position, make our demands, and have the guts to fight for them. We must police and educate those in our trades in order to upgrade the position of our trades. I for one would welcome the chance and not have to fight alone.

DARYL F. KAYL

P.S. I am enclosing a letter head which was handed to me by one of these *wholesale* distributors to give to *my* customers. This company represents many nationally advertised lines which are available and the wholesale prices are being quoted to the very people who we are supposed to *sell.*

PRE-SERVICE LOOKSEE ENDORSED BY NEUTRAL

Middlebush Road
Wappingers Falls, N. Y.

Editor:

It was with keen interest I read the Editorial, "Pre-Service Education to Consumers."

More so because I represent the neutral party (Service without Sales) and am heartily in accord with the idea of a Pre-Service Looksee before calling the service repairman, who is not sitting in his shop awaiting THE CALL only.

Two factors must be altered before this Pre-Service Dream can come true—(a) The Sales Manager must believe in Service and admit to the consumer that some self-servicing is a necessity.

Too many sales managers think of service as the Black Sheep of the mechanical family—the family skeleton to be hidden in the sub cellar—the unspeakable topic.

And (b) the Consumer must begin to look for Quality not Price alone, so that the installing dealer can make a fair profit and spend some time formulating a Pre-Service Policy to fit the particular installation.

When Price Only Counts an installing dealer can have only one thought in mind—get the unit installed, get it operating and then try to collect the bill.

HENRY F. BOEHM, JR.

NON-UNION MAN ADVISES TEEN AGER TO BECOME PLUMBER

Gulfport, Miss.

Editor:

If a teen-ager should ask HOW he could get into the refrigeration and air conditioning industry as an installer or serviceman what would I tell him? (That is a question posed in one of your recent editorials).

Right after World War II I knew all there was to know about the business, and even today I am a fair mechanic after installing and servicing everything from juice machines to hundred ton air conditioning.

I now have a job that pays only $1.15 per hour less than the plumber and $0.90 less than the electrician.

Of course I don't get anything extra for overtime, which there is plenty of in the summer. And I may have to take a cut or lay off in the winter.

This is the best I have been able to find in upstate New York, Florida, Mississippi, Texas, and points between. Of course I am too old to serve as an apprentice, 38 years old, and don't have enough money to buy my way into the Union, so I have worked non-union shops.

I love the work and shall stay with it; but, Mr. Teen Ager, you better start learning to be a plumber as soon as you can.

HARRY OLIVER

RUTHENBERG SECONDS GASSER EDITORIAL

214 Old National Bank Bldg.
Evansville, Ind.

Editor:

With unusual interest I read your recent editorial, "Air Conditioning Can Be a 'Gasser.'" Needless to say, I completely agree with your thesis.

LOUIS RUTHENBERG

Where high humidity is needed . . .

THE LARKIN BAFFLE COOLER COIL

Is ideal for Walk-In Coolers. Florist Boxes, Produce Boxes, Packing Rooms, Etc.

In refrigerators where a high humidity is necessary, it will pay you to install the Larkin Baffle Cooler Coil. By handling a large volume of air and cooling it slightly each time it passes through the coil, it is possible to maintain a higher humidity. Louvers are engineered to provide correct circulation of air and accelerate its flow. Air constantly swirls around stored products, providing proper refrigeration and humidity.

The Larkin Baffle Cooler Coil is durably constructed and is a complete unit. It consists of an aluminum cross-fin coil, double louvered baffle with drain pan, and hangers.

See your wholesaler or write for Bulletin 1057

OUTSTANDING FEATURES

- Patented Larkin Cross-Fin coil with aluminum fins and staggered copper tubes mechanically expanded (aluminum tubes available for ammonia refrigerant)
- Baffles are constructed of heavy-gauge, polished aluminum
- Adjustable baffles easily removed for inspection and cleaning
- Coil and baffle hangers are heavy-gauge die-stamped aluminum channel punched with keyslots for easy attachment
- Matched baffles for left and right sides furnished if specified
- Special-sized baffle cooler coils are also available

WATCHDOG OF THE NATION'S FOOD AND COMFORT — LARKIN

LARKIN COILS INC.
519 MEMORIAL DRIVE, S.E., ATLANTA, GEORGIA

After a Number of Problems Were Solved

$16,000 Air Conditioning System Protects $750,000 Flemish Masterpiece

NEW YORK CITY—To protect a single painting against the ravages of excess temperature and humidity, the New York Metropolitan Museum of Art has spent $16,000 for a special air conditioning system.

The system was conceived, designed, and installed by Airvel, Inc., local Carrier dealer. Through automatic controls and interconnected ducts and chilled water lines, the invaluable old Flemish masterpiece, which cost the museum a cool $750,000, is assured protection at all times.

The painting is the Merode altarpiece, painted by Robert Campin in 1420. It now hangs in the Spanish room of the Cloisters, a reconstructed medieval castle in Fort Tryon Park at the northern end of Manhattan Island.

Painted on Wood

Because the work is painted on wood rather than canvas, protection against swelling and warping, caused by changes in temperature and humidity is essential. The ancient painting was in bad condition when the museum received it in 1957. But it has since been completely restored.

To keep it in good condition, the museum called on Airvel to design an air conditioning system that would hold temperature to within 2° F. d.b. and relative humidity to within 3% 24 hours a day, 365 days a year. Design condition is 70° F. d.b. and 55% r.h.

Paul Smith, Airvel engineer, was faced with some unusual restrictions in designing the system and placing his equipment.

Distinctive Decor Could Not Be Destroyed

Museum officials did not want the distinctive decor of the Spanish room spoiled by ductwork. Because of the castle's thick stone walls, Smith was limited to using the already existing heating and ventilating ducts. With slight alterations, they proved satisfactory.

Only place to locate the air conditioning machinery was in a low-ceilinged chamber situated next to and a few feet lower than the Spanish room.

The Spanish room measures about 30 by 30 ft. with 15-ft. ceiling. To maintain the required temperature and humidity conditions, a Carrier 5-ton liquid chiller and a 5-ton air handling unit of 1,800 c.f.m. capacity were selected. The chiller is water cooled, using unrecirculated city water. A Bahnson humidifier and six electric strip heaters for reheat and tempering air were installed in the supply ductwork.

The existing supply and return air ducts were completely cut off from the building system and the new air handling unit installed to utilize these ducts.

An insulation worker crawled into the very tight hung ceiling to insulate the ducts against heat loss and condensation.

Supply duct runs under the floor of the Spanish room to three grilles in the floor of window alcoves along the outside wall. To keep them unobtrusive, the grilles are painted bronze to match their surroundings.

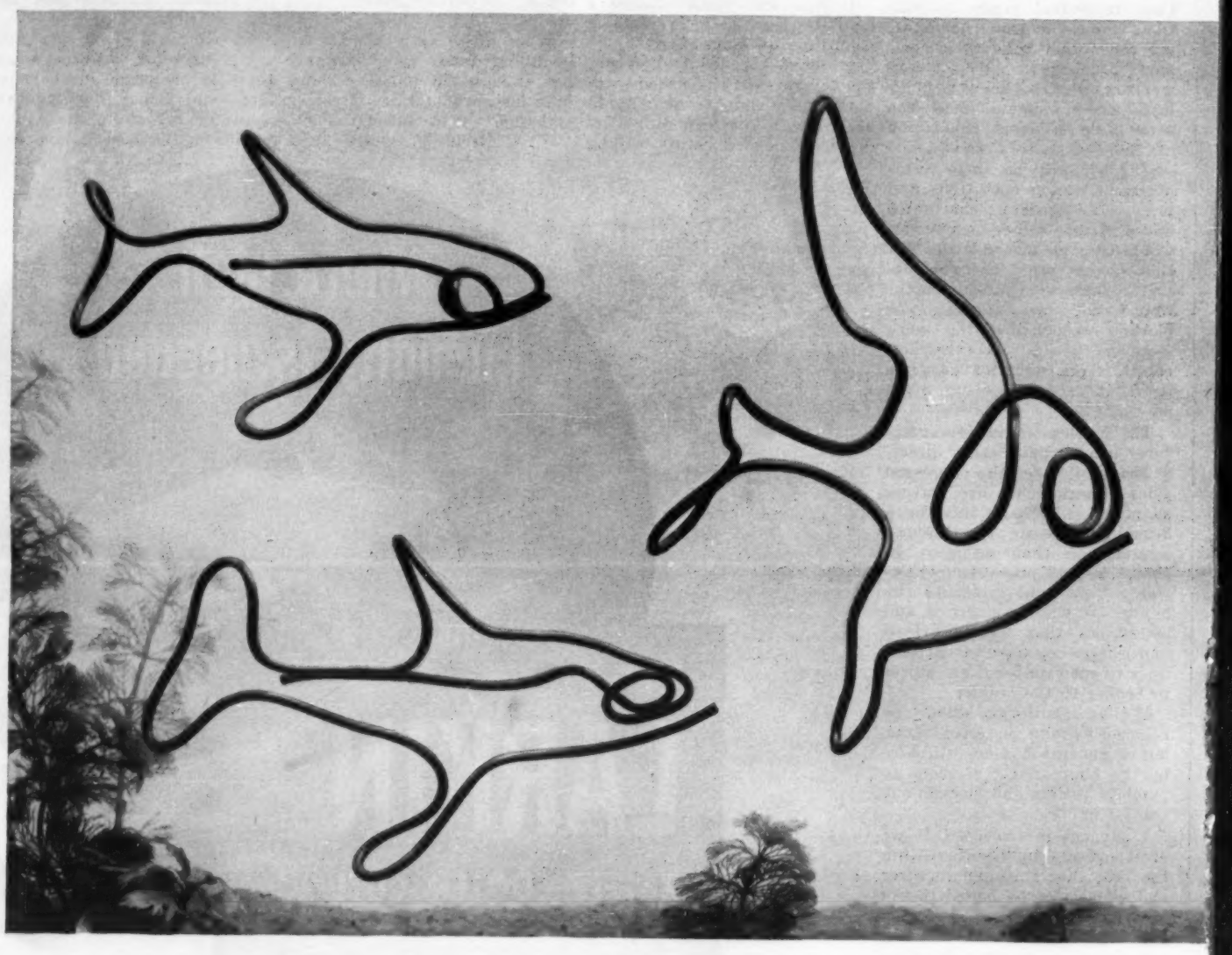
Return air grille is set low on the interior wall opposite the windows. This had to be changed to meet requirements of the new system. Barber-Colman grilles were installed and painted to match the wall. Attached to one is a Minneapolis-Honeywell temperature and humidity control.

Second Chiller, Air Handling Unit Standby

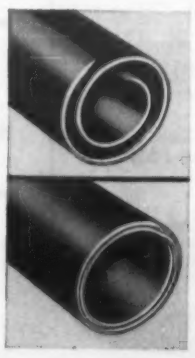
To safeguard against any possible breakdown that might endanger the valuable painting, a second chiller and air handling unit of the same capacity was

INTERCONNECTED AIR DUCTS assure constant flow of properly tempered air to Spanish room at all times to protect medieval art work hanging there.

MAZE OF PIPING ... also inte...



There's almost no limit to the things Bundy can mass-fabricate



Bundyweld is the only tubing double-walled from a single copper-plated *steel* strip, metallurgically bonded through 360° of wall contact for amazing strength, versatility.

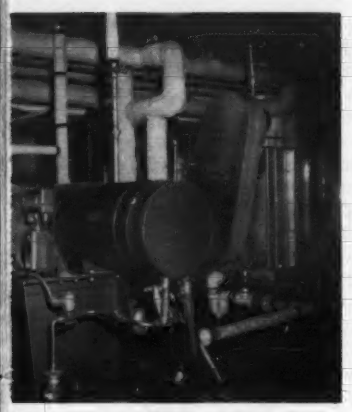
Bundyweld is lightweight, uniformly smooth, easily fabricated. It's remarkably resistant to vibration fatigue; has unusually high bursting strength. Sizes up to ⅝" O.D.

When it comes to mass-fabricating steel tubing into complex shapes, the folks at Bundy® are specialists. In everything from coils and capillaries to serpentines and discharge tubes, chances are Bundy can bend it better. And here are just a few reasons why it will pay YOU to bring your tubing problems to Bundy:

Bundyweld® Tubing is the safety standard of the refrigeration industry—double-walled from a *single* strip of steel, copper-brazed through 360° of wall contact to make it leakproof by test. And the special Bundy beveled edges result in smooth inside and outside seams . . . no inside flash to be removed.

Our designers await your call, at *any* stage of product development. Perhaps they can suggest a new "twist" that'll save you time and money in manufacture.

Bundy fabricators can mass-fabricate parts to your specifications on Bundy-designed fixtures and machines. The unit-cost is low . . . the quality high. Got a tubing problem? Better see Bundy *first!* Phone, write, or wire Bundy Tubing Company, Detroit 14, Michigan, today.



hows how two chilled water systems are rconnected to protect painting.

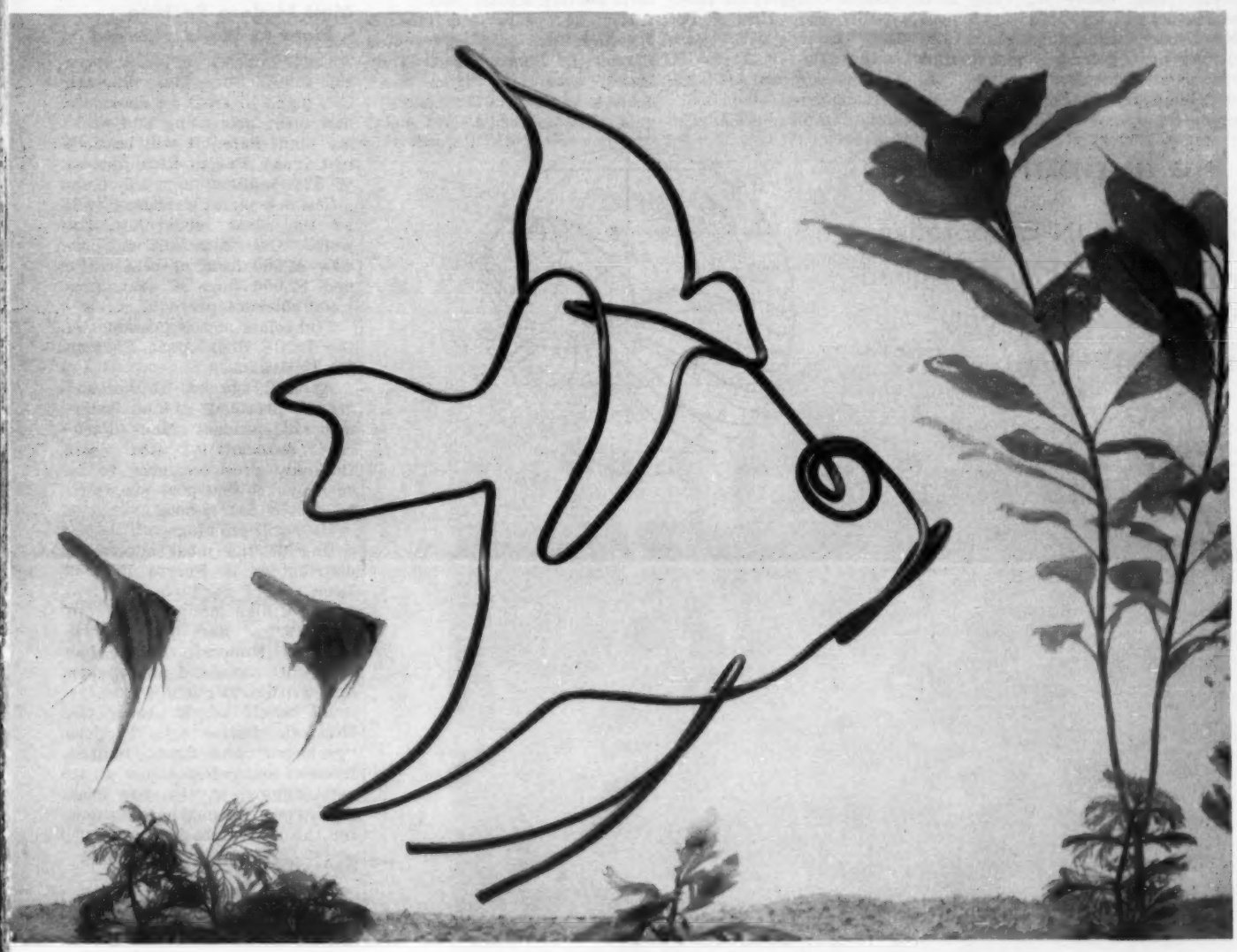
installed alongside the above mentioned equipment in the machinery room.

Under normal circumstances, this standby equipment is used to air condition the Treasury room, another gallery directly below the Spanish room. Air conditions in the Treasury room are not critical and the system is used for comfort cooling only.

Thus, if any trouble should develop in the Spanish room system, the Treasury room system automatically switches over to maintain proper conditions in the Spanish room.

The control system works this way. A drop in static pressure actuates a Cleveland air switch. The switch, in combination with relays and a motorized damper, switches air flow from the Treasury room duct to the Spanish room supply duct. Then, if necessary, solenoid valves switch chilled water supply from Treasury room coils to Spanish room coils.

OLD FLEMISH MASTERPIECE for which the new York Metropolitan Museum of Art spent $750,000 is protected day and night from the ravages of temperature and humidity by a special air conditioning system. A supply grille is seen in floor of alcove at left and return air grille at right. Temperature and humidity control is on return air grille.



In the building engineer's office, Airvel installed pilot lights to indicate that trouble had developed and the chillers and air handling units had automatically switched over.

Also installed is a low humidity alarm, which rings when humidity drops too low.

After the engineer locates the cause of the trouble and repairs it, he must manually reset all the controls, which are Minneapolis-Honeywell.

The elaborate control setup was conceived by Smith in order to satisfy the temperature and humidity requirements.

He noted that a recording hydrograph has proved that the system is providing the service for which it is intended.

The system has been performing for two years. Safety controls have functioned when necessary.

There were occasions when the chiller failed due to clogged strainer and the switchover solenoids were called into play and the pilot light went on.

Low humidity alarm has been activated a few times because doors of the room cannot be closed, causing the humidity to vary under certain conditions.

Wm. James Kennedy Dies

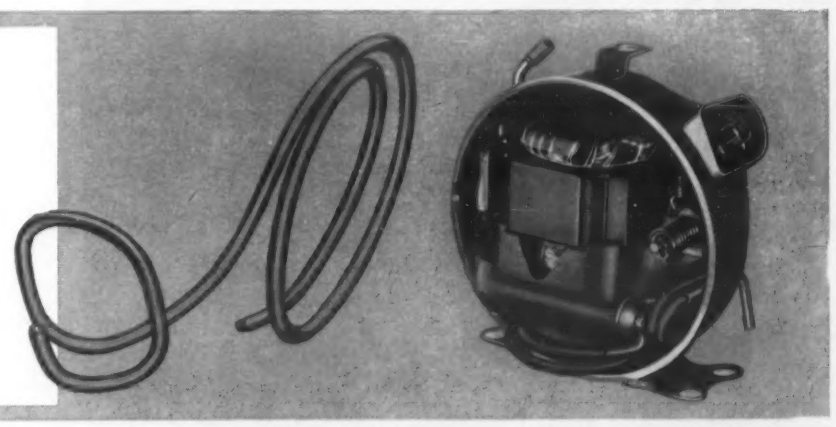
CHICO, Calif. — William James Kennedy, 67, died at his home here recently. He was known as "Bill" Kennedy, and this is the name he liked and had printed on his business cards.

He was the owner of Chico York, refrigeration and air conditioning contracting firm in the Sacramento valley, handling York equipment and Tyler equipment.

The day of his death, Chico York was announced the successful bidder for a $112,000 heating installation in a new Chico State college building.

Chico York has a refrigeration shop, and a sheet metal shop, both employing a substantial number of journeymen.

The discharge coil for this air-conditioning compressor is 5/16" x 37 1/2" with one end sized to 1/8" I.D.; tight-tolerance fabrication allows coil to clear inner casing and outer shell of compressor.



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'Pulsating, Perspiring Population'

Not-So-Poor-Anymore Puerto Rico Presents Profit Possibilities for Air Conditioning

By George F. Taubeneck

SAN JUAN, Puerto Rico — Because it is tropical, Spanish, and presumably "poor," many people will assume that this otherwise interesting island might have little place in our industry's plans for expansion.

Why, then, would 23 Puerto Rican business establishments subscribe (and renew their paid subscriptions faithfully) to AIR CONDITIONING, HEATING & REFRIGERATION NEWS?

Heating doesn't interest them, obviously. But refrigeration does —domestic, commercial, and "applied" big-scale air conditioning installations.

Cooling machinery is important to this pulsating, perspiring population.

Moreover, air conditioning is emerging as a way of doing better business privately. (Maybe even publicly, also, in terms of the growing tourist trade which is accustomed to air conditioning, and demands it.)

Puerto Rico isn't relatively "poor," nor backward, any more, either.

No matter what impression you may have gained from reports about transplanted juvenile delinquency in New York, Puerto Ricans who *work in Puerto Rico itself* are responsible, reliable citizens of the U.S.A.

They're lifting themselves by their bootstraps economically, and they now comprise a growing market for our industry's products.

Herewith a random sampling of their (subscribers to the NEWS) endeavors and opinions:

Mendex Electric Corp. is backing up its beliefs in the future of Kelvinator refrigerated products with a "saturation" radio-advertising campaign in Puerto Rico.

All-time sales record-breaking results are reported.

Firestone Interamerica Co. (Westinghouse refrigerators and air conditioning) tells a reporter from the NEWS that it scarcely can keep up with demand.

According to M. G. Farber of that firm, room air conditioners are "BOOMING! ! !" (Approximate gestures—like a fisherman describing the one that got away—emphasize this quote.)

It's his conservative belief that demand for these cooling products will "BOOM! ! !" from 70% to 100% in a few years.

Installation, Service Not Sales Are Bugs

"Sales aren't my problem," he avers. "Installation and service are the bugs. That's where the NEWS can help, by publishing more service information."

For 24 years Martinez & Marquez, Inc., have represented Carrier in Puerto Rico. They install everything from room coolers up to 750-ton centrifugals. This concern's sheet metal shop has an output of approximately 500,000 pounds a year.

In the opinion of Esteban Martinez, sales manager, total (all-size) air conditioning installations in this tight little isle will increase more than 300% in the next five years!

Although room air conditioners and packaged units are most wanted presently, he foresees an upsurge in assembled-and-engineered air conditioning sales.

"Applications for building permits in the office and factory categories," he observes, "are rising sharply."

"Incidentally," he adds, "the NEWS has been of great help to us in locating sources of supplies for profitable on-the-site jobs."

Most Modern Packing Plant In World Planned

Chris Finkbeiner, president of the Puerto Rico Meat Packing Co., plans to erect an enormous new meat processing and packing plant here. It will be built in Caguas, Puerto Rico, at cost of $2.5 million.

The new plant, he claims, "will be the most modern in the world." He predicts it will process 52,000 head of beef cattle and 52,000 hogs a year, plus 1,500 chickens per hour.

Finkbeiner also is president of the Little Rock Meat Packing Co. in Arkansas.

At the age of 31 he was elected president of the American Independent Meat Packers Association, and was the only president ever to be re-elected to that post—in which he served four years.

He's still pitching.

One of the most successful distributors in Puerto Rico is Leon Co. of Santurce and San Juan. Unlike many of his contemporaries and competitors, manager Honorato Balzac has excellent command of spoken and written English.

In behalf of E. Leon Co. Honorato Balzac sells Fedders "packages" and Revco built-in freezers and refrigerators at an astounding rate. He has even higher performance expectations for the immediate future.

Sees 100% Rise In His Cooling Sales Each Year

"Between 1960 and 1965 I will sell 100% more air conditioners every year as compared to the previous annum," he declares.

"Inasmuch as Puerto Rico is both tropical and prospering," Honorato confides, "I expect to air condition the entire island in a short period of time."

In the estimation of Emilio Vassalo, general manager of the General Gases & Supply Corp., the Caribbean market for refrigerating products will more than double in three to five years.

He should know, because his firm supplies refrigerants, tubing, fittings, valves, controls, and insulation to "the trade" in that area. Hence, his finger is on the market pulse.

Among the American manufacturers he represents are Chase Brass, Mortite, Chemical Solvent, and Allied Chemical International.

His firm itself packages bulk refrigerants in one pound containers, which it sells throughout the Caribbean islands in substantial, growing quantities.

Ever since 1955 he has been subscribing to the NEWS, and finds it "certainly helpful, espe-

Engineering the temperature...

with a ONE PIECE, 233 TON Evaporative Condenser. Factory assembled and shipped as a unit, the compact DF-41A is only 93" high, 96" wide and 247" long.

RECOLD CORPORATION
7250 East Slauson Avenue, Los Angeles 22, California

RECOLD

cially when it tells about what can be expected in the future."

L. D. Wood, Jr., president of Standard Refrigeration Co., (Worthington dealer) has some contrariwise thoughts.

"I particularly admire your vigorous editorial policy," he says, "especially the recent editorial, 'How Long, O Lord, How Long?' It fitted so well the chaotic situation prevailing here that I made several photocopies to send to my competitors.

Profit Margins Poor

"Air conditioning business in Puerto Rico has never been better as far as actual and future dollar volume is concerned. It has never been worse as far as profit margins are concerned.

"Since Stateside mechanical contractors are free to shop for equipment, it is their custom to discount equipment quotations 5% to 10%.

"This is done in the certain knowledge that when order-placing comes, at least one of the manufacturers will be hungry enough to meet the advance cut price.

"Until the big manufacturers stabilize their pricing, I see no end to this."

Mario Bajandas, manager of Air Conditioning Design, Inc. (353 JA Davila St., Roosevelt, Puerto Rico) is an authority on the air conditioning business.

He also is a mechanical engineer on the staff of Puerto Rico's Office in Charge of Construction.

In the "mainland" U.S.A. he previously worked for York, Servel, Buensod-Stacey, and the U.S.N. Bureau of Yards and Docks.

Capsulized Appraisal Of Industry In P. R.

Capsulized, here is his appraisal of our industry's present status in Puerto Rico:

Room air conditioners. Units designed for humid, tropical areas are needed. Any new developments which could provide more durability through increased resistance to corrosion will be welcome.

Packaged (store type) units, especially air-cooled models. Commercially, this is the most popular application of air conditioning here. Prime factors in sales appeal are flexibility of layout and inexpensive installation.

Built-up and central systems for the residential market. Puerto Rico's first totally air conditioned housing development, consisting of 209 units, is under construction now in Reparto Las Americas. A York 3-ton central unit (on the roof) complete with concealed ducts will cool each three-bedroom, reinforced concrete home in this residential "showcase."

Large central-type air conditioning systems will increase in demand as the industrial program of the Planning Board picks up momentum. Moreover, additional branch factories are being built for lease to continental firms.

Those latter, which are seeking to expand operations throughout Latin America, will need a substantial quantity of "built-up" air conditioning.

Refrigeration equipment for the dairy industry. Progressive evolution of the dairy industry here has been remarkable. Improvement of herds (under the guidance of the Agricultural Extension Service) continues to be a primary factor in this progress.

Installation of adequate refrigeration facilities at every dairy farm is compulsory, it should be noted parenthetically.

Refrigeration for supermarkets and the food industries in general. Important processors in the States are developing wholesale outlets here. Demand for frozen foods is zooming upward.

Chain store interests continue to expand their operations here, also.

Result: the Puerto Rican commercial refrigeration market has a continuing good present and should enjoy an even greater future.

Armour, Wilson, and Swift are putting up real big refrigeration facilities in new cold storage warehouses, it can be mentioned in this connection.

Recently IBEC (a Rockefeller Development Corporation) sold the TODOS chain of supermarkets to Grand Union.

Additional branches in Puerto Rico are planned by the latter firm. ("Mainland" commercial refrigeration people, note.)

When larger segments of the industry—suppliers, wholesalers, manufacturers — become better informed about business possibilities here, it is felt that they will seek extra profits in Puerto Rico.

Consequently, they should be able to enhance the quality and competency of future installations.

At present there are three sources from which business tips regarding Puerto Rican planned projects—large and small—may be obtained by our industry, i.e.:

CONSTRUCTION WEEKLY OF PUERTO RICO, Box 4829, San Juan, Puerto Rico.

AMERICAN PREVIEW OF OVERSEAS PROJECTS, 1200 18th St., N.W., Washington 6.

DORVILLIER NEWS LETTER, 1556 Ponce de Leon St., Santurce, Puerto Rico.

Definitely, this is a PRICE market.

Consequently inferior, complaint-ridden installations are rife. Prices quoted per ton of air conditioning range from $325 to $500 on the average.

These figures probably aren't sufficient to sustain satisfactory workmanship.

Recently, however, double-duct systems and chilled-water applications have been introduced. These advanced jobs are for factories, hotels, and hospitals.

There is a shortage of reliable, well-trained refrigeration and air conditioning mechanics on this thriving island. Hence, some maintenance and repair shops suffer from inefficient, shoddy staffwork.

Some of the best P.R. mechanics have become free lancers. Now they devote themselves to subcontracting work, and are unavailable for servicing.

This chronic shortage of trained technicians is worsened by the fact that many established dealers feel they can't afford to establish training programs.

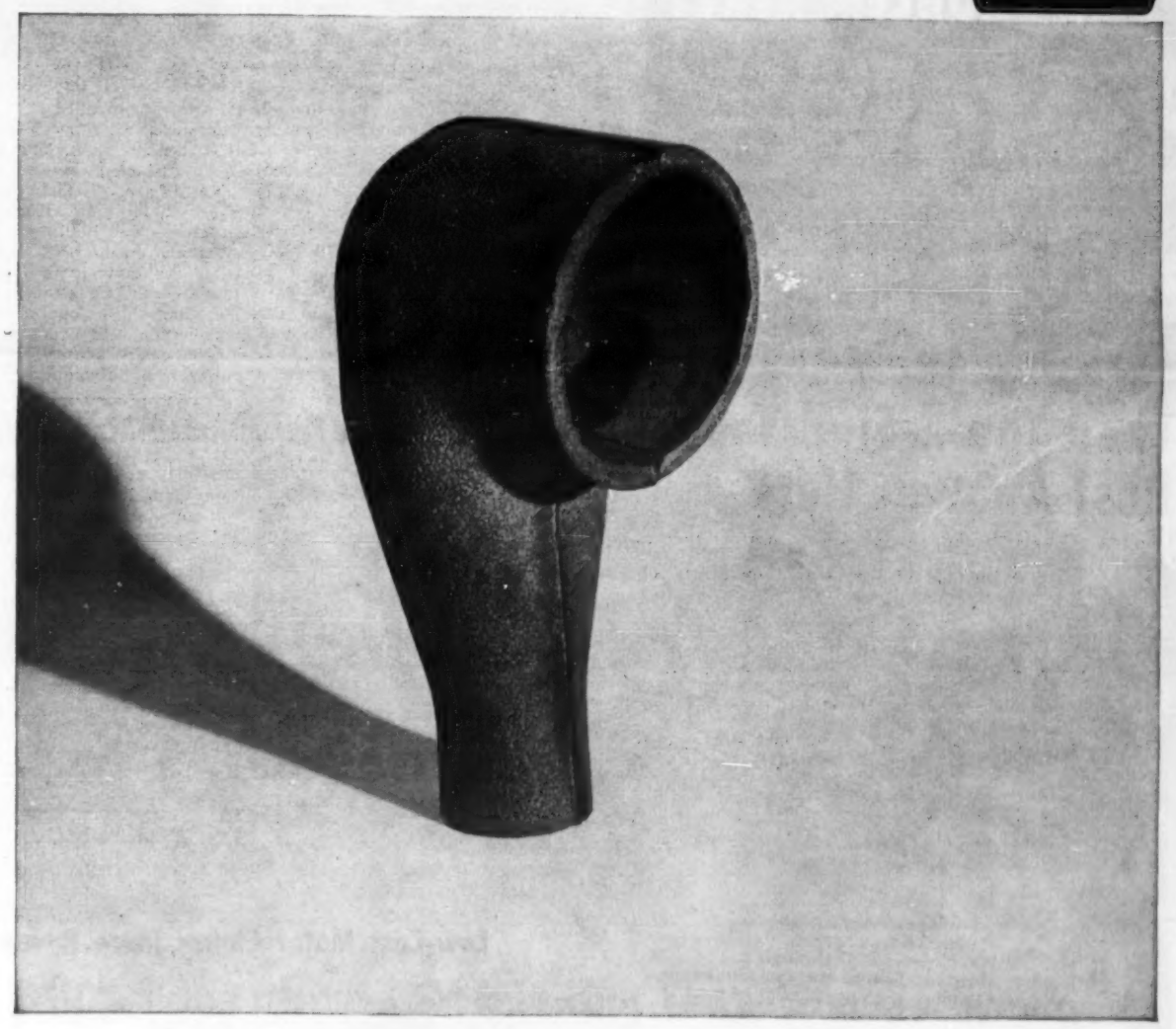
Quite a few electrical engineers, civil engineers, and mechanical draftsmen practice the designing of air conditioning and refrigeration systems here. Sometimes their designs are crude (but not always).

However, during the last couple of years, several firms based in "the States" have opened offices here. These branch operations have brought along their own talent.

Thereupon, this foreshortened situation should correct itself.

In brief, Puerto Rico is a promisingly growing market. It needs everything—better designing, more skilled mechanics, and more attention from the mainland—to achieve its bright potential.

B.F.Goodrich



Know what to make of this?

B.F.Goodrich does . . . because it's their cellular material in one of the thousands of forms and shapes they make for the air conditioning and refrigeration industries. In this case, it's a component for a refrigerated cabinet.

In sponge rubber or cellular plastic, B.F.Goodrich industrial cellular materials are excellent for sealing, gasketing, insulating and vibration damping — under even the most trying conditions.

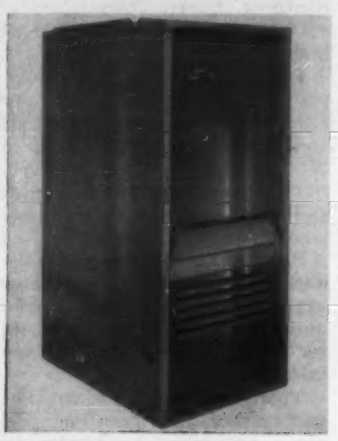
So get the advantage of the experience that has put B.F.Goodrich cellular materials into The Sheraton Hotel, Philadelphia; The Conrad Hilton, Chicago; The Corning Glass Building, New York and many other New York office buildings. Write The B.F.Goodrich Company, 580 Derby Place, Shelton, Connecticut.

CELL-TITE INSULATION TUBING

Cell-Tite tubing is made of tough, flexible rubber with uniform non-connecting cell structure. Especially efficient and convenient for pipe insulation, it will not absorb moisture nor support combustion. Insulation value is excellent. Lengths up to fifty feet make it easy and simple to install.

B.F.Goodrich *industrial cellular materials*

Design Gas Furnace for New Construction Market



● An entirely new line of gas-fired, counterflow furnaces, "designed for the highly competitive new construction market," has been announced by the Janitrol Heating & Air Conditioning Div. of Surface Combustion Corp., Dept. AH&RN, 400 Dublin Ave., Columbus 16, Ohio.

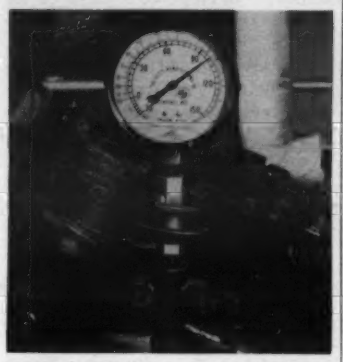
The new models, known as the "J-Line," are said to retain quality construction features often omitted in units in this price range.

The units are described as "unusually compact, having an overall height of only 47½ in., a width of 20 in., and depth of 28 in. The sides and back of the cabinet are die-formed from a single sheet of steel to which the bottom frame and internal partitions are accurately located and spot welded.

"Design features include: all-welded 'Multi-Thermex' heat exchangers; two-pass internal air flow of very low resistance; suspended, rubber-cushioned blower assembly; 'Unidrive' permanent split-capacitor motor blower; a complete, factory-wired control system; and foil-face 'Fiberglas' insulated heat exchanger compartment."

The J-Line models are available with 80,000 and 100,000 inputs.

Gauge Mount Damps Out Vibration

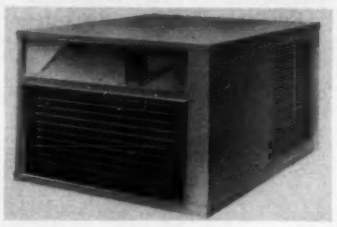


● A gauge mount that is said to lengthen gauge life by effectively damping out mechanical vibration and gauge pointer jiggle has been announced recently by Vilter Mfg. Co., Dept. AH&RN, Milwaukee 7.

Named "Stedy-Mount," it is designed for bottom-inlet gauges weighing up to 2 lbs. and can be used for both ammonia and halogenated refrigerants or any other gas or fluid that does not attack carbon steel. It is especially applicable for use on reciprocating compressors and piping systems in which the fluid or gas flow has pulsating characteristics, according to Vilter.

"A rubber damper isolates the pressure gauge from the compressor or piping system, avoiding a rigid connection between the two and enabling the gauge to stand motionless," it was explained. "Gas pressure is transmitted to the gauge through a small-bore, stainless steel, spiral-wound tube so that only a smooth, even pressure reaches it and, as a result, its pointer does not jiggle."

3-Ton Heat Pump Built In Weatherproof Cabinet



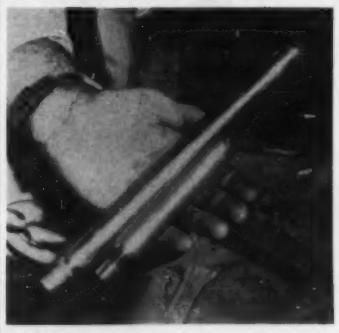
● A 3-ton model built in one weatherproof cabinet has been added to its line of heat pumps by Carrier Corp., Dept. AH&RN, Syracuse 1, N. Y. It is suitable for commercial and residential application and is similar to the 2-ton model introduced a year ago.

"The 3-ton heat pump extends the range of this type of equipment to larger residences and apartments," the company noted. "With a duct attached it can be mounted on the roof of a commercial structure and heat and cool the interior either through a single large diffuser or through ductwork to handle several offices. Carrier also manufactures two-piece models in 3, 5, and 7½-ton sizes.

"Auxiliary resistance heaters are completely prefabricated and slip easily onto the discharge side of the unit when needed. Summer and winter operation of the heat pump is controlled by a single thermostat which switches the unit from heating to cooling and back again without attention.

"A separate outside thermostat is set at the temperature at which supplementary heating is required, switching on the resistance heaters when the temperature falls below that point. All electric controls, including those for the automatic defrosting cycle, are mounted in a single, easily accessible box," according to the company.

Offers 1-Piece Prefabricated Air Chamber



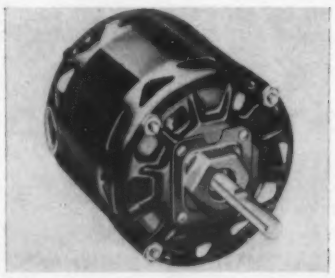
● A one-piece prefabricated air chamber designed to remove hammer and chatter from water systems has been introduced by Wolverine Tube, Div. of Calumet & Hecla, Inc., Dept. AH&RN, 17200 Southfield Rd., Allen Park, Mich.

Trade-named "Tap/Trap," the air chamber provides savings in time, labor, and materials, the manufacturer reports.

Tap/Trap is prefabricated by Wolverine's patented "Spun End Process." It can be installed directly into each supply line in the system by making only one soldered joint. Tap/Trap is completely leakproof, according to the manufacturer.

Tap/Trap is available in 6 in. and 12-in. lengths. Longer lengths can be produced to meet special requirements. Over-all diameter is 1 in. which is reduced at one end to ½-in. nominal for use in standard fittings.

Low-Cost Motor Claims More Power



● A new fractional horsepower "MicroMotor" "developed to meet the demands for low cost, quality motors that are smaller in size and yet produce more power" has been announced by the Redmond Co., Inc., Dept. AH&RN, Owosso, Mich.

Designated the Type AO, this motor has a stamped steel case and exposed laminations. A 4⅛ in. diameter motor, it has high performance characteristics that were formerly available only in larger diameter motors, according to Redmond.

Available in four and six-pole design in a horsepower range from ⅙ through 1/50, the Type AO MicroMotor is for many applications in the heating, air conditioning, ventilating, refrigeration, and appliance industries, the company said.

It is available with internal fans, and totally enclosed or open ventilated.

Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

Tell him: "AH&RN sent me!"

DO YOU FIND YOUR PUMP PROBLEM HERE?

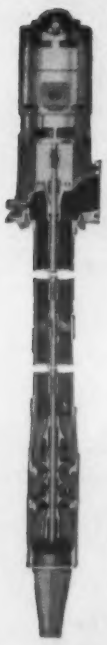
A — Water Supply, Air Conditioning, Refrigeration, Cooling Towers, Sump Pumping, Etc.

B — Booster Service, Cooling Towers, Water Treatment, Water Circulation, Brine Service, Etc.

C — Hot Water Circulation, Ice Water or Brine, Clear Water, Boilers, Booster Service, Etc.

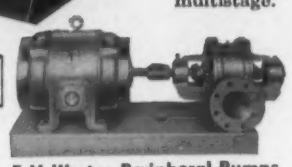
D — Hot and Cold Liquids, Refrigerants, Boiler Feed, Cooling Towers

Then You'll Find Your Best Answer Here—



A — F-M Pomona Water-Lubricated Turbine Pumps
Easily installed, easy to adjust for varying field conditions. Available with wide choice of drivers.

B — F-M Split-Case Centrifugal Pumps
Capacities, pressures and sizes for any requirements. Single-stage or multistage.



C — F-M Westco Peripheral Pumps
Capacities to 200 gpm. Pressures to 900 ft. Sizes 1¼" through 2½". Horizontal single-stage or multistage. Develops high pressure at normal operating speeds.

D — F-M Builtogether Centrifugal Pumps
Capacities to 900 gpm. Pressures to 525 ft. Sizes ¾" through 5". Single-stage or multistage.

FREE! Expert Engineering Help at Your Service

Be *sure* of low-cost, foolproof pumping installations that match your exact requirements... call in your Fairbanks-Morse Sales Engineer. Take advantage of his broad technical background and expert knowledge of pumps for air conditioning, plumbing and heating. Call him today, or write Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Illinois.

See Sweet's Product Design Catalog File for complete F-M Pump Line.

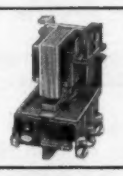
FAIRBANKS-MORSE
a name worth remembering when you want the BEST

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY
RAIL CARS • HOME WATER SERVICE EQUIPMENT • MAGNETOS

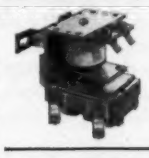
THIS COMPLETE CONTROL FAMILY is especially engineered for the air conditioning industry by...

RBM

Type C—30, 40, 50 amp.
2-3-4 Pole 30 amp.—600 volts. 2-3-4 pole 40 amp.—230 volts. 2 pole 50 amp.—230 volts. Same mounting holes and coils for all ratings and pole forms.



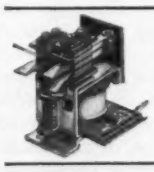
Type S-30—40 amp.
Low cost. Small size. Exceed rigid requirements of industry's largest users.



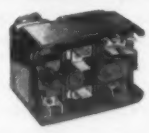
Type 80 Controller
Specific design for nominal 3 HP or 3-ton single phase compressors.

Type 75
Low cost power appliance relay. Dependably handles up to 6000 W. at 240 V, resistive load per pole or compressors 18a running 90a locked rotor at 250 volts.

Series 129000 Shunt Type Relay—SPNO, SPNC or NO-NC
Large double break contacts—Relay enclosed. Coils for standard commercial voltages. Other coils available for special application. For heater, fan control, general circuit switching, etc.



General Purpose Relay
98000 Series AC or DC. Permits engineering short cuts lowering your "finished product" cost.



Series 128000 Potential Starting Relays
For starting single phase capacitor start compressors.

When RBM specially engineered its first air conditioning control, it quickly recognized the industry need for not just one... but for a *complete family*. So RBM has done the job. Now there is a single source for *all* air conditioning controls... each one meticulously engineered for its application. What's *your* requirement? See RBM.

Consult your local RBM Product Application Engineer or Write for Bulletins 1030A, C-8, 1010A, 1060 and C-10.

RBM CONTROLS DIVISION
ESSEX WIRE CORPORATION
Logansport, Indiana

FACTORIES:
Peru, North Manchester and Logansport, Indiana

McCray Bows Closed Service Meat Case

● Availability of a new, closed service case for the display of fresh meats or delicatessen items has been announced by McCray Refrigerator Co., Inc., Dept. AH&RN, Kendallville, Ind.

"These cases are designed to detract from the fixture and to dramatize the merchandise through the maximum use of glass in narrow framing," the company stated. "Rear glass service doors slide easily on nylon glides and are removable. All the glass on these cases is 3 pane 'Thermopane'."

The case top and walls of the display compartment are acid resistant white porcelain. The display compartment floor is acid resistant grey porcelain. Stainless steel tops and display compartment liners and three-step shelf sections with cut-outs for deep pans are available for delicatessen cases at extra cost.

Two coils are used. One, a gravity coil, is located in the top of the case; the other, a bare tube coil, is located under the display floor. Cases are available in 8 and 12-ft. lengths.

G-E Introduces Ballast For Germicidal Lamp

● A new ballast said to deliver rated lamp current and provide germicidal effectiveness for application in room air conditioners and evaporative coolers has been introduced by General Electric Co., Dept. AH&RN, Schenecetady 5, N. Y.

Designated 6G3551, the ballast is designed specifically for one G25T8 lamp to operate at 118 volts, 60 cycles, at 600 milli-amps. According to company engineers, the new ballast eliminates the need for using two smaller ballasts wired in parallel to do the same job.

You don't have to clean out scale like this...

CALGON® ECONOMY POWDERED ACID IS SAFE!

Specially formulated for *safe, low-cost* cleaning of cooling water systems. When economy and safety are prime considerations, get Calgon Economy Powdered Acid from your Refrigeration Wholesaler.

CALGON COMPANY
DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.
HAGAN BUILDING, PITTSBURGH 30, PA.
In Canada: Hagan Corporation (Canada) Limited, Toronto

Refrigerator-Freezer Features 1 Coil Evaporator

● Its 1960 "Sovereign Frost Clear" model G-169 FO1 bottom mount type freezer combination offers 16.5-cu. ft. gross capacity, with 23.4 sq. ft. of shelf area, and features a simplified "one-coil" evaporator design, according to Gibson Refrigerator Co., Div. of Hupp Corp., Dept. AH&RN, Greenville, Mich.

The Frost Clear refrigerator compartment has one "swing'r" shelf which is adjustable and removable, one sliding shelf, one stationary shelf, two fold down half-shelves, two 15 qt. porcelain crispers, and two concealed interior lights. The inner door panel has a full width butter and cheese compartment, two adjustable aluminum door racks, egg racks and one deep door shelf.

The Frost Clear 162-lb. freezer section has a "pres-toe" opener and is insulated on all six sides. Other features include a "swing'r" frozen food storage basket, and a sliding shelf that gives quick access to ice cube trays and other frozen foods. The freezer inner door panel has two deep door shelves which hold 20 juice cans and 14 frozen packages.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

Introduce Boiler Cleaning, Sealing Compounds

● Two newly-developed compounds for reconditioning heating systems, one removing accumulated boiler rust and sludge, the other sealing leaks without shutdowns, have been announced by J. A. Sexauer Mfg. Co., Dept. AH&RN, 2503-05 Third Ave., New York City 51.

They are called Sexauer "Heat-Pep" cleaner and Heat-Pep sealing compound.

"Test data indicate that Heat-Pep cleaner's action is physical rather than chemical," the company said. "It removes rust and sludge caused by corrosion and water impurities in old boilers and loosens core sand, oil, and dirt common to new boilers. Simultaneously, it coats boiler walls. Heat-Pep cleaner vaporizes as it cleans; it gets through the heating system as well as the boiler.

"Test data on Heat-Pep sealing compound show that it works by finding its way to existing boiler leaks, sealing them immediately."

Ice Machine Cleaner Comes In 4-Oz. Packages

● Introduced by Stiles-Karlsonite Corp., Dept. AH&RN, 1550 Grand Ave., Waukegan, Ill., is the new Karlsonite ice machine cleaner for commercial ice making equipment.

The product is a crystalline soluble chemical that will dissolve the mineral deposits and corrosion that forms in ice cubers and similar equipment, according to the company's announcement.

The cleaner is packaged in transparent plastic envelopes, each containing 4 ozs. of the chemical, enough for a single treatment, the company explained, adding: "The contents of the package are poured into the make-up water sump and recirculated until the system is thoroughly cleaned of all deposits," it is pointed out.

BEFORE YOU BUY, THINK:

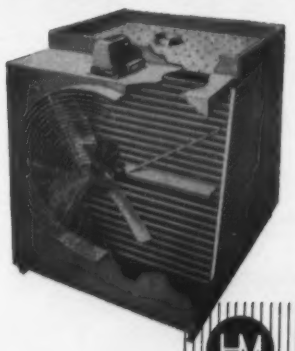
Will fungus attack your cooling tower 2 years from now?

Not if it's a Halstead & Mitchell cooling tower with a 20-Year Guarantee

The specially treated wood decking in H&M towers resists rotting, fungus attack and algae which accumulates and obstructs air flow in most other towers. Performance remains "like new" in H&M cooling towers year after year.

Only Halstead & Mitchell offers a 20-Year Guarantee on the wetted deck against failure due to rotting or fungus attack.

Other H&M features for unusually low maintenance include permanently sealed fan bearings, and a heavy gauge steel cabinet protected against corrosion by three plastic coats applied *after assembly*. Be sure. Ask your local wholesaler for H & M towers, or write to Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



H & M COOLING TOWER WITH PRESSURE TREATED DECKING

HM Halstead & Mitchell

Water-Cooled Condensers • Cooling Towers • Air-Cooled Condensers • Finned Coil Products

Electric Heat In Central Systems?

Trend of Development and Promotion Could Prove To Be Serious to Residential Air Conditioning and Heating Industry

Con

Central Units Called Costly, Dirty, Uncomfortable, etc. by Utility Executive

..... Power Co.

Dear .....:

Central warm air furnaces electrically heated are now being offered by both Lennox and Majestic. This may be a means of trying to entice the warm air heating dealers into electric heating field. Well intentioned as it may be, it is an area which we at ESHAC [Electric Space Heating and Air Conditioning Committee of Edison Electric Institute] should be very concerned about.

My personal opinion is that this can start a serious retrogression in the art of comfort heating by other manufacturers of warm air equipment. As I see the situation, we can expect the central system of electric heating to:

I. Increase the cost of heating electrically because of

A. Lowered distribution efficiencies with duct systems;

B. Increased room temperatures because of greater air movement rates;

C. Single point control resulting in overheating some rooms while underheating others because of weather effects and solar gains;

D. Added cost of cleaning or replacing filters, etc.;

E. Added costs of decorating because of circulation of dirt;

F. Electric rates of some utilities having load factor features can result in higher energy costs.

II. Decreased comfort because

A. Temperature variations between rooms is difficult to select and control;

B. Off and on operation of blower produces rapid changes in air movement, temperature;

C. Unless expensive zone control is used, the room in which the thermostat is installed controls the heat supplied to all other rooms, thus some rooms are overheated, others underheated;

D. Clogged filters adversely affect both quantity and temperature of heated air;

III. Less convenience because

A. Furnace and duct system occupies valuable floor space and frequently cuts up an area destroying its utilization for other purposes;

B. Exceptionally difficult to heat one room at a time;

C. Inspection of filters, belt tightness and lubrication require personal attention.

IV. Reduced cleanliness

A. Rapid movement of air picks up more dust and distributes it more profusely;

B. More rapid air movement increases wall streaking.

V. Less dependable because

A. Operation depends on many single or duplicated units, such as thermostat, blower motor, fuse or other protective device, and driving belt.

VI. Greater maintenance cost because of

A. Motor care, replacement;

B. Belt adjustment and replacement;

C. Filter cleaning and replacement.

In view of the above, which I do not feel is complete, it appears that we should be striving to persuade these people to improve rather than degrade the quality of their heating systems. I can appreciate that the problem of humidity control and air conditioning together with air cleaning would make certain aspects of the duct system desirable but it does not appear to me that a central heating unit can give the customer the heating comfort comparable to other room by room systems. Thermo-Base heating is a much more practical approach toward the total problem. However, I can see little need to incorporate the heat dissipating equipment in the distribution system used for air cleaning, dehumidification, and mechanical refrigeration.

(Name withheld)

Meanwhile, Back at the Ranch . . .

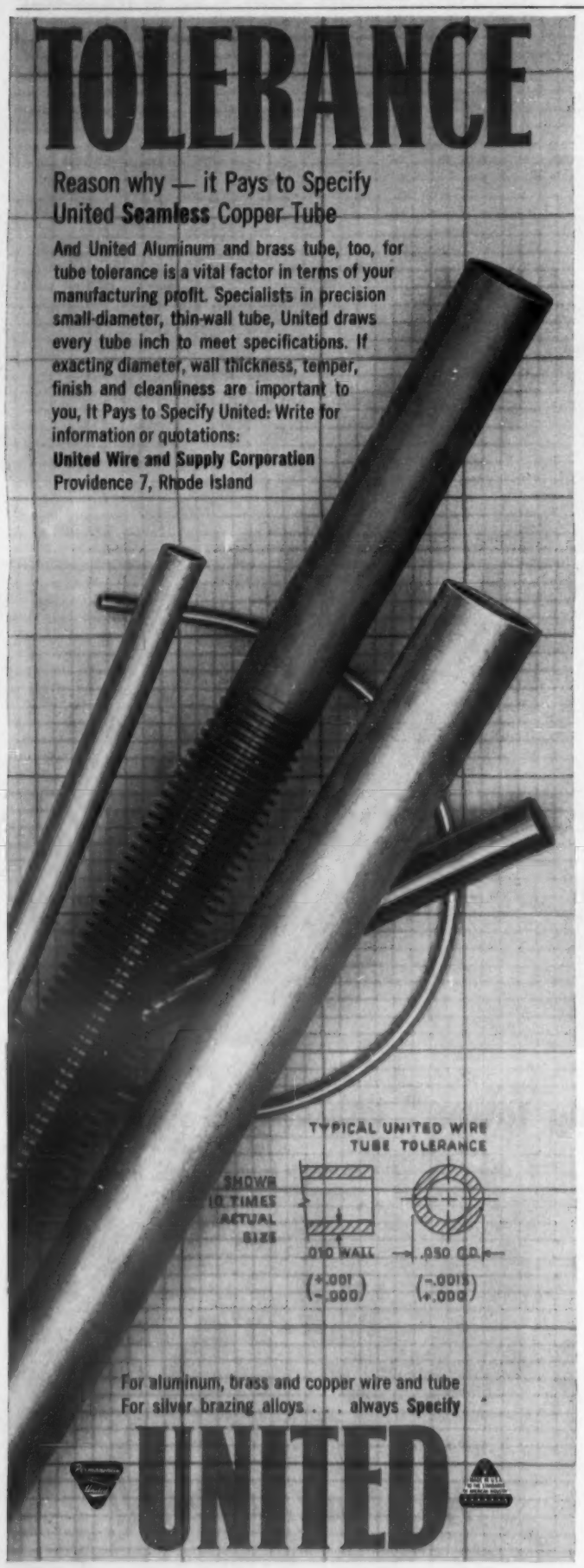
Editor's Note: "Electric heat" is rapidly becoming a magic symbol to the public, thanks to greatly stepped up advertising and promotion by many utilities. Although the term includes heat pumps, it's most often thought of now, and described, as resistance heating, usually in baseboard units.

As such, electric heat is considered pretty much of a dirty word by many in the conventional heating industry, and perhaps with some justification. Certainly, it also poses problems in the sale of central residential air conditioning systems.

If the views on central warm air furnaces electrically heated, as expressed by an executive of a major utility in the accompanying letter, are at all typical of present utility thinking in general (and we trust they aren't), then the conventional heating and air conditioning industry may be in for some rough competition. But even if not *typical*, these viewpoints may be encountered in some areas.

The answers to such thinking are ably spelled out in the accompanying letter from the president of one of the leading manufacturers of central heating and air conditioning systems—John W. Norris of Lennox Industries, Inc.

Armed beforehand with both the alleged "objections" and the answers, enterprising contractors and salesmen can do a real selling job. On these pages, then, they'll find plenty of ammunition to prepare for the coming battle.


TOLERANCE
Reason why — it Pays to Specify
United Seamless Copper Tube
And United Aluminum and brass tube, too, for tube tolerance is a vital factor in terms of your manufacturing profit. Specialists in precision small-diameter, thin-wall tube, United draws every tube inch to meet specifications. If exacting diameter, wall thickness, temper, finish and cleanliness are important to you, It Pays to Specify United: Write for information or quotations:
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For aluminum, brass and copper wire and tube
For silver brazing alloys . . . always Specify
UNITED

Reduce Inventory with this Two-in-One
Selector Switch
A-B
Change from 2-position to 3-position or vice versa ... in 30 seconds!
Bulletin 800 Selector Switch
Here's the most handy selector switch on the market today—the Allen-Bradley standard duty Bulletin 800. It is good for either 2- or 3-position operation... and the changeover from one to the other takes only 30 seconds. Simply loosen two screws, rotate a metal disc through 90°, retighten the screws . . . and the job's done.
The operating lever is "positive" in action. Maintenance free, double break, silver alloy contacts are protected in the cover—careless wiring cannot cause trouble.
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In Canada: Allen-Bradley Canada Ltd., Galt, Ont.
ALLEN-BRADLEY
Quality Motor Control

Pro

Central Systems with Air Movement Best Answer, Says Norris of Lennox

Lennox Industries, Inc.

Dear Mr. .....:

For his dream of "Living Better Electrically," ..... actually needs the warm air industry a whale of a lot more than he realizes today, and I am confident that time will prove this to him most vividly.

In his clearly outlined criticism of the central forced warm air system of electric heating, he misses completely that vitally important element in indoor comfort—*continuous but gentle air motion.* When a house is insulated and weather-stripped as it must be for economically sound electric heating, you get a stifling, stagnant "feel" inside without some means of mechanical ventilation.

In an electrically heated home this is aggravated by the fact that there is no combustion device forcing the infiltration of air into and through the house to support combustion. Odors linger, you can get into condensation problems, and you had better pick friends for bridge who do not smoke.

Because ..... has thoroughly detailed his criticism of the central forced warm air system, I cannot refrain from answering him in some detail.

I. The cost of electric heating is not higher with the central system. With the air distribution system in a basement, or a crawl space, or in a slab, any and all heat lost from the distributing ducts finds its way into the house and is *usable heat.*

This situation was proven by University of Illinois research at Urbana, long years ago. To the surprise of those engineers, it was found that heat lost from a distribution system that is within the heated space is all usable heat. With a distribution system in an attic, of course, this is not true. Here very heavy duct insulation is required but there still is considerable loss from attic ducts.

.....'s claim of poor control from a single thermostat is not borne out by experience. With constant blower operation you get a temperature leveling effect with a forced warm air system in these very tight and well insulated electrically heated homes that results in less overheating than you get with the individual room control that is used within-the-room electric heating now.

You get no extra heating cost due to the "overheating" claim.

.....'s fear of more cleaning and decorating costs is exactly the reverse of what happens. With a well-designed air circulating system, incorporating proper filters, you will get a far cleaner house than with in-the-room electric heat whether it is in the baseboard or in the ceiling.

You read the transcript of the "Woman's Forum" we held in New York City this spring. Did you notice Mrs. Thurston's comments? She had a baseboard hot water (hydronic) heating system with an attic-type Lennox air conditioner and an attic air distribution system.

She reported her house far cleaner when operating the air conditioner than during the heating season—and especially when friends called and smoked—she would turn on her evaporator blower (without refrigeration, of course) to clean up the air.

II. ..... fears decreased comfort. I believe time will prove that the over-all comfort with a good air circulating system is far above that with any direct in-the-room system.

The individual room thermostat scheme is a glamorous idea, but it simply does not work out this way in actual practice. The average family today lives with doors open from room to room. Every room in the house is usually in use and people want the same temperature in every room. Believe me, when we fail to produce even temperature in every room, we hear about it.

I think that you are aware of how easy it is to maintain even temperatures in all rooms with continuous air circulation in a well-insulated and well weather-stripped home. These extremely well built places present absolutely no temperature control problem. An air circulating indoor comfort system, with continuous air circulation, will produce better control and better comfort than any radiant heating, in-the-room, system.

III.-IV. Motors, blowers, belts, and the controls that go with central system heating are so foolproof today that they involve a negligible service problem. To be sure, air filters need to be serviced, but this is less expensive than the wall and drapery cleaning involved when you don't filter this filth from the air that prevails in an electrically heated home, the same as it does in any other home.

The machinery of a central electrically heated forced warm air system is vastly simpler than the machinery of a modern dishwasher or automatic clothes washer. Obviously, it is much simpler than the "machinery" of an oil or gas furnace.

The only valid objection I can find to an air circulating electric system is that it costs more for the original installation. A Cadillac costs more than a Volkswagen. There are plenty of people in these United States who are willing to pay more for the fresher, cleaner, and more healthful warmth that comes from a properly installed air circulating system.

The forced warm air industry has not done a good job of developing electric forced air furnaces as rapidly as electric heat is coming into American homes. In our own case, we only have two units in production now, one for 41,000 and the other for 68,000 B.t.u.h. bonnet output.

But we are hard at work on the development of a complete line of electrically heated forced warm air furnaces. We expect to have production rolling by the end of this year. In addition, we will have compact "duct heaters" which can be used with central refrigerated air conditioning for zone control of heating, where such control is of any benefit.

We have already started alerting our more than 5,000 Lennox dealers to the fact that electric heat is very much in their future. I am enclosing the June issue of the Lennox News with this promotion, starting on page 3. As our line of electrically operated forced warm air furnaces goes into production, we will call salesmen and dealers in for meetings to further teach the importance of their place in the sun in this fascinating new world of electric heat.

JOHN W. NORRIS,
President

'Show Us' Advantages of Electric Heat, Engineer Asks

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Consulting Engineers
Air Conditioning — Heating
Ventilating — Plumbing &
Electrical Design
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Detroit 19, Mich.
KE. 7-0794 - 5

To Whom It May Concern:

Re: Electric Heating

Gentlemen:

We have read with deep concern many articles in various trade publications, magazines, etc., regarding the tremendous application of electric heating in new buildings.

We have seen the local electrically heated school, we have made complete surveys on church and school buildings, and have concluded that there is a *very limited* application of electric heating in this area.

We have read page after page of propaganda, listing the advantages and benefits of electric heating, but no specific information on *actual* first cost and operating costs of systems which have been installed.

If you desire, we would be happy to send you unbiased factual reports that we have made to church and school boards listing comparison costs of various heating systems for their proposed buildings. None of them have seen fit to have electric heating systems installed after reading our reports, despite pressure extended by Utility Companies and Sales Engineers.

We would very much like to see facts presented to the public, instead of colorful propaganda. We would be happy to design an electric heating system if someone can show us:

1. Lower first cost (cost must include insulation).
2. Lower operating cost.
3. More comfortable heating.
4. Adequate fresh air ventilating system.

Sincerely,
G. GATCHELL

Don't waste time cleaning Ice Machines...

USE CALGON® ICE MACHINE TREATMENT

A slowly soluble phosphate specially designed to inhibit scale in ice machines. Get it from your Refrigeration Wholesaler today.

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SIZE

Reason why — it Pays to Specify United Seamless Copper Tube

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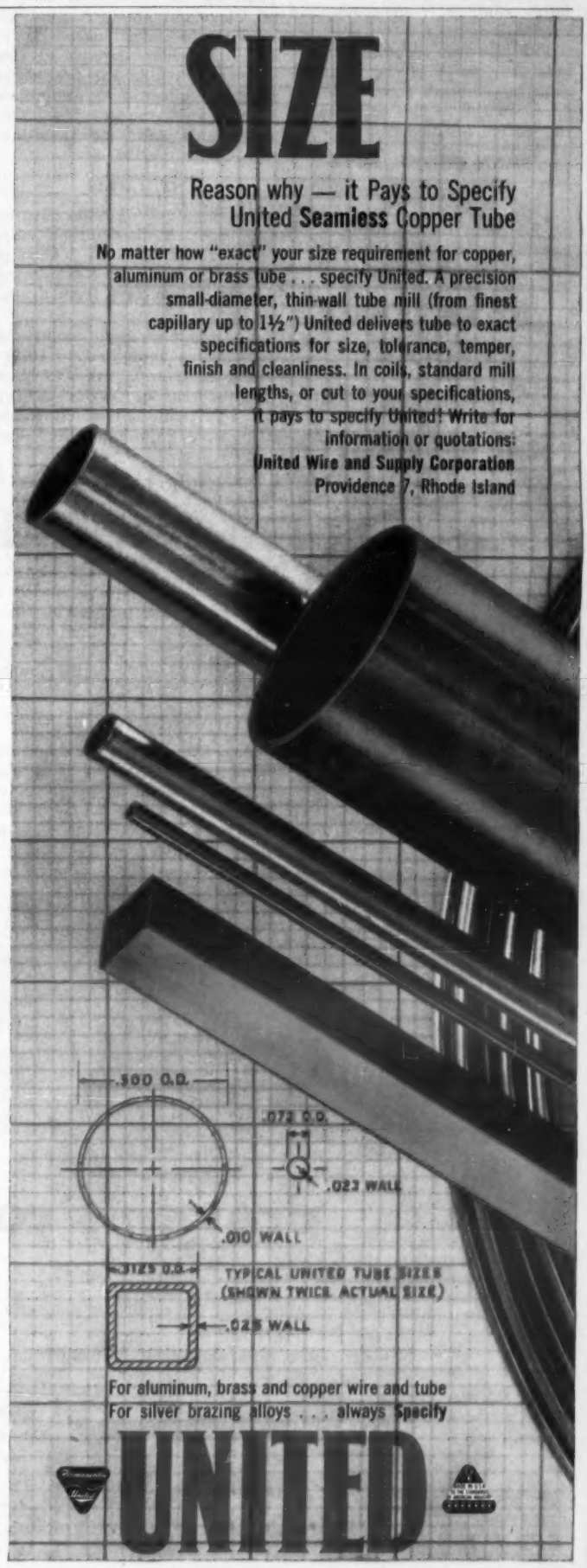


For aluminum, brass and copper wire and tube
For silver brazing alloys . . . always Specify

UNITED

August Air Conditioner Sales Volume Up Over 1958 Month In 7 of 10 Territories

DETROIT — Association and utility reports received by the NEWS on air conditioner sales in August show that volume was above last year in seven of ten areas.

PHILADELPHIA AREA

The Electrical Association of Philadelphia reported that distributors there sold 2,173 units to dealers in five surrounding counties. This compares with a -593 sold in August, 1958. The latter figure reflects return of units sold on consignment in previous months.

For the first eight months of this year, sales of the Philadelphia distributors rose to 49,264 from 40,914 in the corresponding period of 1958.

PENN POWER AREA

Southwestern Pennsylvania dealers reported August sales of 384 room air conditioners, up sharply from the year-earlier total of 202, according to West Penn Power Co. This boosted sales for the first eight months to 2,932, compared with 1,841 in the same period last year.

Sales of dehumidifiers by these dealers in August totaled 266, up from 177 in the previous August. Their total for the first eight months was 968, against 532 last year.

CLEVELAND

In the metropolitan Cleveland area, distributor figures compiled by the Electrical League of Cleveland show, August air conditioner sales soared 130% over the year- ago level and were up 58% in the first eight months. Sales of dehumidifiers in the area zoomed 164% for August and 162% for the January-August period.

ST. LOUIS

In St. Louis, Union Electric Co. reported distributors' sales of air conditioners to dealers in its territory totaled 1,385 during August, down 21% from a year earlier.

For the first eight months of 1959, sales amounted to 15,444 units, compared with 17,804 in the like year-ago period, a drop of 13%. Dehumidifier shipments also were running behind last year.

FLORIDA

However, a report from Florida Power Corp. showed that heat pump and air conditioning sales for August in north-central Florida were slightly above a year ago, totaling 3,358 compared with 3,351. January-August sales rose to 11,762 from 11,585 in the first eight months of 1958.

WASHINGTON, D. C.

And The Electric Institute of Washington reported that distributor sales of room air conditioners (including 2 hp.) in the area rose to 1,300 from 1,244 in August, 1958. First-eight-month sales totaled 31,710, compared with 20,389 in the like year-ago period.

Sales of dehumidifiers in the Washington area plummeted to 955 in August from 2,231 a year earlier. For the first eight months of 1959, however, dehumidifier sales were ahead of last year's corresponding period, totaling 6,186 against 5,898.

TAMPA

Tampa (Fla.) Electric Co. said reports from 149 dealers showed that 362 room air conditioners were sold in its area in August, down from the 682 sold in August, 1958.

CHATTANOOGA

Figures compiled by the Electric Power Board of Chattanooga for August show that area dealers sold, for residential use, 1,520 air conditioning units and 24 heat pumps, plus 28 commercial air conditioning units. A year earlier, the figures were 1,202 air conditioners and 9 heat pumps for residential application, and 35 commercial air conditioners.

FORT WORTH

In the Fort Worth area, Texas Electric Service Co. said reports from 34 dealers indicated they sold 747 room air conditioners (cooling only) during August, compared with 678 in August, 1958. Their room unit sales for the first eight months of this year totaled 6,886, up from the 5,646 sold in the '58 period.

DALLAS

However, in the Dallas area, dealer reports to Dallas Power & Light Co. showed air conditioner sales dropped to 1,672 in August from 2,391 a year earlier. Sales for the January-August period also declined from last year, amounting to 24,933 against 26,340. These figures are based on reports from 23 dealers for August, 1959, and 20 dealers for the previous August.

Of 11 reports reaching the NEWS on air conditioner sales in July, seven indicated that volume was higher than in the previous July.

CHICAGO

According to the Electric Association of Chicago, July distributor sales of room air conditioners in that area totaled 4,052, a drop of 10% from a year earlier. However, for the first seven months, sales were up 19% to 36,951.

Sales of central air conditioners were reported as 624 for July and 2,397 for the January-July period, gains of 443% and 233%, respectively. Dehumidifier sales rose 96% to 2,953 in July but dropped 1% to 12,456 for the first seven months.

WICHITA

In the Wichita, Kan. area, central air conditioner sales by retailers declined to 59 from 65 in July, 1958, but for the first seven months were still 38% ahead of last year, totaling 517 to 375.

These figures were supplied by Kansas Gas & Electric Co. which also reported that room air conditioner sales in July fell to 795 from 990 a year earlier. For the first seven months, sales totaled 4,879, 11% under the 1958 seven-month total of 5,474.

SPOKANE

In Spokane, Inland Empire Electrical League reported that area dealers sold 315 room air conditioners in July, compared with 296 in July, 1958, and 678 in the first seven months, against 772. Central air conditioner sales totaled 115 in July and 330 for the January-July period, compared with 66 and 152 in the year-earlier periods.

Gets Charter

BATON ROUGE, La. — Factory Service, Inc., 2031 North St., has been granted a state charter to deal in air conditioning and heating equipment.

AAF Announces 3 Personnel Shifts

LOUISVILLE, Ky. — Three major personnel moves among the sales divisions have been announced by American Air Filter Co., Inc.

Dale D. Briggs, supervising sales engineer for its School Air Systems Div., has been transferred to AAF's Pacific region "to strengthen the firm's sales efforts for its defense products and its defense-connected commercial products sales."

Frank T. Carroll, sales manager for Illinois Engineering products, has been moved from the Engineered Air Systems Div. to School Air Systems Div., replacing Briggs. He will remain in the home office in Louisville.

W. H. Fogarty has joined the home office staff to fill the vacancy that was created by Carroll's move.

DOES YOUR APPLIANCE CARRY THIS SEAL of QUALITY?

The motor used in this equipment is protected against overloads, low voltage, over-voltage with a Mighty Mite Thermal Protector

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street • Akron, Ohio

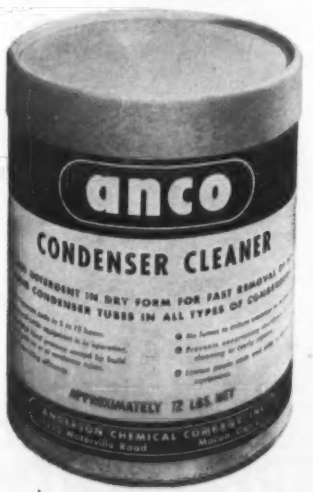
bring head pressure DOWN

keep operating efficiency UP

with anco condenser cleaner

ANCO Condenser Cleaner removes scale and rust from condensers within 2 to 15 hours, depending on scale thickness and composition. Following application, head pressure drops to normal and the condenser's efficiency is restored. Simply dissolve this dry formula in sump while system operates. It works quickly and safely and is equally effective in evaporative condensers and those with separate cooling towers.

Ask your supplier about it.



Specialists in making water behave

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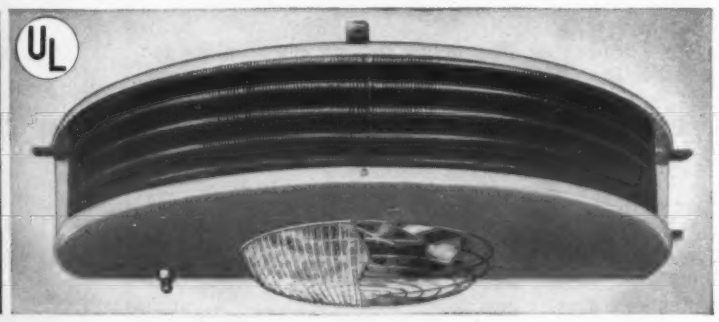
More efficiency greater capacity with SEMI-CIRCULAR UNIT COOLERS



NOW... EXCLUSIVE CIRCUITING SYSTEM

prevents coil "frost-up"

Freeze-up, common to similar units, is completely eliminated. Newly designed air diffusers insure proper air distribution to utilize entire coil surface for more efficiency and economy of operation.

New electrostatic filters and full size heat exchangers are featured on Krack Semi-Circular Unit Coolers—plus other design and construction advantages. Capacities: 360 to 1075 BTU/hr. at 1° T.D.

Send coupon today—for new bulletin giving all specifications.

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Manufacturers of freon, ammonia, flooded ammonia heat transfer equipment

REFRIGERATION APPLIANCES, Inc., 901 Lake St., Chicago 7, Illinois
Send free bulletin giving all technical details.
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CARL BAUMHOFER (r.), new works manager for Recold Corp., accepts congratulations from Ernie Jarvis, secretary-treasurer.

Baumhofer Heads Recold Works

LOS ANGELES—Carl Baumhofer has been appointed the new works manager for Recold Corp., it was announced by H. T. (Hy) Jarvis, president.

Baumhofer's duties will include planning, organizing, directing, and controlling all production operations as well as improving the manufacturing methods and processes and selecting equipment and facilities required to produce the products most economically.

He spent 12 years with Servel gaining extensive experience in production, planning, design engineering, and tool and field engineering, and also gained experience as general superintendent for a Los Angeles appliance manufacturer.

Diehl Supervises Hartley Projects

YORK, Pa. — A. E. Diehl, project engineer for York Div. of Borg-Warner Corp., has been named assistant manager of the division's Hartley plant here.

Henry M. Haase, York president, said Diehl will assume immediate supervision over special projects carried on at Hartley. One such project at this plant is the construction of special heat exchange units for the Atomic Energy Commission.

G-E Launches Motor Selection Service for OEM

SCHENECTADY, N. Y. — A new motor selection service for original equipment manufacturers has been launched by General Electric Co.

Called "Econo-Match," the program is designed to encourage fuller use of the motor manufacturer's engineering contribution to the driven equipment.

The Econo-Match program will use an enlarged force of trained field engineers to work with machine designers in studying the needs of the end user and matching the drive motor to those needs exactly, according to William V. Gough, manager of marketing for G-E's Small A-C Motor and Generator Dept.

To Econo-Match a motor to a particular pump, fan, or machine tool, the function of the driven equipment must be analyzed, Gough said. The program is set up to provide such expert engineering service as fast and as economically as buying standard motors "off the shelf."

"All of the relevant characteristics of the driven machine—speed, torque, duty cycle, desired life, and special environmental conditions—are factored into the picture at the proposition stage," it was explained.

"Back in the department's Schenectady factory, a computer sifts through thousands of possible designs in minutes. Advanced manufacturing techniques permit the building of motors with special characteristics where needed as fast and as efficiently as standard units."

The department is conducting refresher courses for some 400 General Electric sales and application engineers throughout the country to implement the Econo-Match program.

Bush Moves Klein To Michigan City Plant

WEST HARTFORD, Conn. — Cecil Boling, president, Dunham-Bush, Inc., has announced the appointment of Frank D. Klein as general manager of the company's Michigan City, Ind., plant.

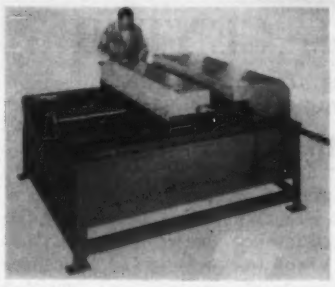
F. D. Klein

Klein goes to Michigan City from the Dunham-Bush main office here where he was product - manager-air conditioning. Previously, Klein was chief engineer of Governair Corp., and regional manager for UsAirco.

Hitchcock Promoted At Kelvinator Plant

GRAND RAPIDS, Mich.—Appointment of Craig Hitchcock as chief inspector at the Grand Rapids Kelvinator plant was announced by George Beld, works manager.

Hitchcock joined the company's product engineering department in 1948 and for the past several years has served as assistant manager of product engineering. He succeeds Wayne Dreger who recently resigned.



Machine Forms Both Sides In One Pass

CHICAGO — Another duplex type roll forming machine has been added to The Lockformer Co. line of metalworking machinery.

The new 10-station machine is designed for medium and high production metal fabricating plants where time savings of over 50% can be realized by forming both sides of a sheet in one pass through the machine, the company said.

Whereas the principal part shape fabrication is done on the outboard shafts, the inboard side of the machine can also be equipped with rolls for forming other parts, it was pointed out.

The basic machine consists of two 10-station Lockformer units with 24-gauge capacities (but heavier-gauge units can also be supplied). One unit is stationary and the other is movable to accommodate various sheet widths, from 10 in. minimum to 40 in. maximum. Forming speeds up to 120 f.p.m. can be attained, it was stated.

Further information may be obtained from The Lockformer Co., Dept. AN-8, 4615 W. Roosevelt Rd., Chicago 50, Ill.

Ucon Uses Improved Processing Techniques

INSTITUTE, W. Va.—Several improved processing techniques incorporated in its new 50-million-pounds-per-year "Ucon" fluorocarbons plant were announced by Union Carbide Chemicals Co., division of Union Carbide Corp.

"Included in these improved techniques are highly-advanced dehydration by molecular sieves, and an ultra-modern system of instrumented production control," the announcement said.

According to John R. Hulten, manager, Fluorocarbons Div., the over-all advancement of the operation means that all grades of fluorocarbons will be available at all times for shipment from the plant's extensive storage facilities which include 12 38,000-gal. tanks and several smaller units.

Fluorocarbons currently being turned out at the new plant are Ucon 11, 12, 22, 113, and 114.

Special bronze alloy construction —high resistance to corrosion and fatigue
Gas tight under prolonged vibration— minimize noise
Standard of the industry as original equipment — U. L. listing for sizes 3/16" through 1½" both high and low service
Absolutely free of contaminating foreign matter— furnished in air-tight poly-ethylene bag

ALSO AVAILABLE Flexonics synthetic Freon-resistant hose for refrigeration and air conditioning service.

VIBRA-SORBERS

The original and sure way to effective vibration and noise control in compressor piping.

IH-340

Flexonics

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INDUSTRIAL HOSE • EXPANSION JOINT • BELLOWS • AERONAUTICAL • AUTOMOTIVE

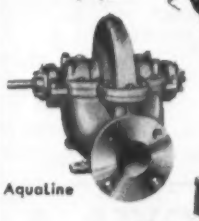
Flexonics Research Laboratories, Elgin, Illinois

In Canada: Flexonics Corporation of Canada, Limited, Brampton, Ontario

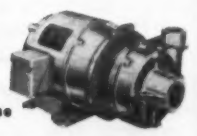
THESE QUALITY PUMPS CUT COSTLY SERVICE CALLS

PEERLESS PUMPS

PEERLESS END SUCTION AND SIDE SUCTION AIR CONDITIONING PUMPS COST LESS—LAST LONGER



Aqualine



Fluidyne

PEERLESS AQUALINE® Pumps are available in sizes to 8-inches. Capacities to 2600 gpm, heads to 280 feet. Temperatures to 250°F. Horizontal split case design allows quick inspection without disturbing piping.

PEERLESS FLUIDYNE® Pumps are compact end-suction design. Redi-Packed in 22 sizes from 1 x 2 x 6 to 2½ x 3 x 10, for immediate shipment. Heads to 230 feet, capacities to 300 gpm, motors from 1 to 15 hp.

If there is a key word to describe Peerless Pumps, that word is QUALITY. You'll find it in the way the pumps are designed. You'll find it in the way the pumps are made. And you'll find it most apparent in the way these pumps operate. Remarkably long trouble-free operating records are routine with these better-made pumps.

But QUALITY is just the start of a long list of important features that recommend the Peerless AquaLine and Fluidyne line of pumps for your water handling jobs. There's immediate availability from ready-to-ship stocks. Complete hydraulic coverage for every type of application. Compact streamlined design that gives you space-saving good-looking layouts. And fast, on-time service from a network of warehouses and field offices.

ATTENTION DEALERS: A limited number of Peerless Aqualine and Fluidyne pump dealerships are available. Please write for complete information.

Putting Ideas to Work

fmc

Peerless Pump Division

PEERLESS PUMP DIVISION, FOOD MACHINERY AND CHEMICAL CORPORATION
2005 Northwestern Avenue, Indianapolis 8, Indiana

Gentlemen: Please send me immediately:
☐ Bulletin B-2319 on Peerless Fluidyne Pumps.
☐ Bulletin B-2100 on Peerless Aqualine Pumps.
☐ Name and address of nearest Peerless Dealer.

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Address _____
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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Pressure and Vacuum Measurements

Discussion of pressure and vacuum measurements is unavoidable in the heating-cooling industry. Design engineers, servicemen, salesmen, purchasing agents daily use terms like "inches of mercury," "feet of water," "p.s.i. absolute." In many instances, these people are not sure of the relationship which exist among the several units of pressure measurement. Such persons go frantically searching for some sort of conversion table when confronted with a term other than that with which they are familiar.

This brief review presents all the pertinent relationships and equivalents which arise in practical discussions.

First must be understood the difference between **gauge** and **absolute** pressures. Pressures read off all practical working gauges ignore the atmospheric pressure which surrounds the gauge and which acts upon it when the dial shows zero pressure. At sea level, this all-pervading atmospheric pressure is 14.7 p.s.i.—rounded off to 15 p.s.i. in practical calculations. Measured in inches of mercury, atmospheric pressure is 29.92 in. —rounded off to 30 in.

Zero p.s.i. gauge, therefore, is equal to 15 p.s.i. in absolute pressure, since p.s.i.a. takes into consideration absolutely all pressure exerted at a given place and time.

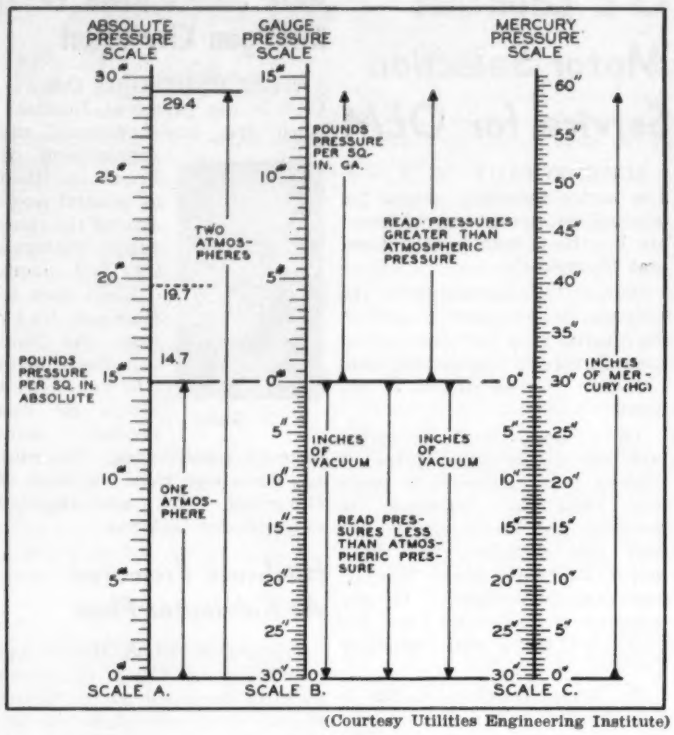
If positive pressure exists in a vessel, the absolute pressure is determined by adding 15 to the gauge pressure. If a negative pressure (vacuum) exists in the vessel, the absolute pressure is determined by subtracting the converted gauge reading from atmospheric pressure.

An example: to a gauge reading of 45 p.s.i., add 15 to get 60 p.s.i.a.

Another: A vacuum reads 12 in. on a compound gauge. Subtracting this from 30-in. atmospheric pressure, we find the absolute pressure inside the vessel is 18 in. of mercury—chemical symbol Hg. To convert this figure to p.s.i.a., divide the absolute inches of mercury by 2 (actually 2.036—see Table II) and obtain 9 p.s.i.a.

It is with vacuum measurements that many become confused. As shown in the latter example, vacuums may be expressed in p.s.i.a. or in inches of mercury. They are also expressed in millimeters and mi-

Figure 1



(Courtesy Utilities Engineering Institute)

Table 1

PRESSURE EQUIVALENTS

1 lb. per sq. in.	144.	lbs. per sq. ft.
	2.036	in. mercury (Hg.) at 32° F.
	2.0416	in. mercury (Hg.) at 62° F.
	2.311	ft. water at 70° F.
	27.74	in. water at 70° F.
	27.71	in. water at 62° F.
1 oz. per sq. in.	.1272	in. mercury at 32° F.
	1.733	in. water at 70° F.
1 atmosphere	2116.8	lbs. per sq. ft.
	14.7	lbs. per sq. in.
	33.960	ft. water at 70° F.
	33.947	ft. water at 62° F.
	29.92	in. mercury (Hg.) at 32° F.
	30.0	in. mercury (Hg.) at 62° F.
1 in. water at 70° F.	.03609	lb. per sq. in.
	.5774	oz. per sq. in.
	5.196	lbs. per sq. ft.
	.0735	in. mercury (Hg.) at 62° F.
1 ft. water at 70° F.	.433	lb. per sq. in.
	62.31	lbs. per sq. ft.
1 in. mercury (Hg.) at 32° F.	.491	lb. per sq. in.
	7.86	oz. per sq. in.
	1.136	ft. water at 70° F.
	13.63	in. water at 70° F.

(Courtesy Utilities Engineering Institute)

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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Table II

lbs./ sq. in.	oz./ sq. in.	Inches of Hg	Inches of Water	Feet of Water	Mm of Hg	Atmospheres
1	16	2.036	27.7	2.31	51.7	0.068
14.7	235	29.9	407	33.9	760	1

crons. Study of Fig. 1 while reading the following explanation will make clear the relationship of all these units.

First, observe the ABSOLUTE PRESSURE SCALE at the left. Notice that the units are p.s.i. and that the scale begins at zero and increases indefinitely—actually ending at about 2 atmospheres in this drawing.

Observe now the GAUGE PRESSURE SCALE in the center. From 1 atmosphere upward, the units are p.s.i.g.; below 1 atmosphere the units are inches of vacuum. Notice that 1 atmosphere is 0 p.s.i.g. and that the numbers increase in either direction from zero—increasing indefinitely in positive pressure, increasing to 30 in. vacuum measurement, since this is as much vacuum as it is theoretically possible to attain. By definition, there is absolutely **nothing**, no pressure at all in a perfect vacuum, but a perfect vacuum has never quite been reached.

Comparing the two scales so far discussed below the 1 atmosphere line, it can be seen that 12 in. of vacuum approximates the 9 p.s.i.a. calculated in the example above. Five p.s.i.a. approximates 20 in. of vacuum but only 10 in. of mercury absolute.

This difference between "inches of vacuum" and "inches of mercury" is comparable to the difference between p.s.i.g. and p.s.i.a. This can be readily seen by studying the far right column in Fig. 1, MERCURY PRESSURE SCALE.

Inches of mercury on the right side of this scale begin at absolute zero and increase indefinitely in the same manner as does p.s.i.a. at the far left. But inches of vacuum on the left of this scale run from zero at 1 atmosphere downward to 30 exactly as on the GAUGE PRESSURE SCALE.

Another sample problem will illustrate this relationship. If a vacuum gauge reads 17 in. of vacuum, what is the absolute pressure in inches of mercury and in p.s.i.a.?

Solution: 30 — 17 = 13 in. of mercury absolute pressure.

$$\frac{13}{2} = 6.5 \text{ p.s.i.a.}$$

Practically, the answers may be read directly from Fig. 1. A straightedge lined up with 17 in. of vacuum will show 13 in. of mercury at the far right and 6.5 p.s.i.a. at the far left.

It is more usual to hear vacuum measurements in terms of inches of vacuum, rather than p.s.i.a. A so-so vacuum might be referred to as a 15-in. vacuum; a 25-in. vacuum is much better, but modern evacuation and charging procedures on refrigeration systems call for pulling greater than a 28-in. vacuum.

In factory-controlled evacuation, very high vacuums are obtained. When better than 28.5 in. of vacuum is reached, some begin to speak in "millimeters of mercury." There are 25 millimeters to an inch, so this terminology gives more subdivisions to refer to in high vacuum work. When the vacuum drops below 1 millimeter, engineers talk "microns." A micron is one-one/thousandth of a millimeter. Vacuums of 200-100 microns and less are becoming quite common in production line procedures.

Fig. 1, Tables I and II show all pertinent equivalents. Together with this explanation they make possible the conversion of any pressure unit to any other unit.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by industry authorities.

Q. I have 29,000 cu. ft. of warehouse space where we keep motor blocks and such things. They are rusting. Will a dehumidifier keep these parts from rusting?

S.A.T.—Winchester, Conn.

A. Dehumidifiers may supply part or all of the answer, depending on factors like wet or dry floors, ventilation, atmospheric contamination.

As a start, contact one or more of the dehumidifier manufacturers for their recommendations, but be sure to give a more detailed description of your problem than you have given here.

Give thought, too, to using a protective coating on the blocks.

Can you tell me where to obtain engineering or servicing data on the "Silo" gas refrigerator made in Germany?

C.M.Y.—Wayne, Mich.

A. The information you require may be obtained from
Wilh. Loh & Co., Gmbh
In der Grobe 2-4
Siegen-Westfalia
West Germany.

WHAT . . WHEN . . WHERE

—A Guide to Coming Events of Interest

National Frozen Food Distributors Association Meeting
Oct. 25-28, Sherman hotel, Chicago.

Refrigeration Service Engineers Society Convention
Oct. 30-Nov. 2, Atlantic City, N. J.

Air-Conditioning & Refrigeration Institute Membership Meeting
Nov. 1, Haddon Hall, Atlantic City, N. J.

Air-Conditioning & Refrigeration Wholesalers Meeting
Nov. 1-2, Atlantic City, N. J.

National Commercial Refrigerator Sales Association Convention
Nov. 2-4, Traymore hotel, Atlantic City, N. J.

11th Exposition of the Air-Conditioning & Refrigeration Industry
Nov. 2-5, Convention Hall, Atlantic City, N. J.

National Hotel Exposition
Nov. 2-6, Coliseum, New York City.

National Electrical Manufacturers Association Meeting
Nov. 9-13, Traymore hotel, Atlantic City, N. J.

The Institute of Boiler & Radiator Manufacturers Meeting
Week of Nov. 9, Seaview Country Club, Absecon, N. J.

National Electric Power Conference
Nov. 18-20, Hotel Westward Ho, Phoenix, Ariz.

National Warm Air Heating & Air Conditioning Association Meeting and Convention
Dec. 1-4, Chase Park-Plaza hotel, St. Louis.

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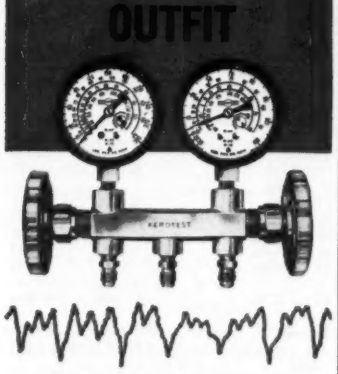

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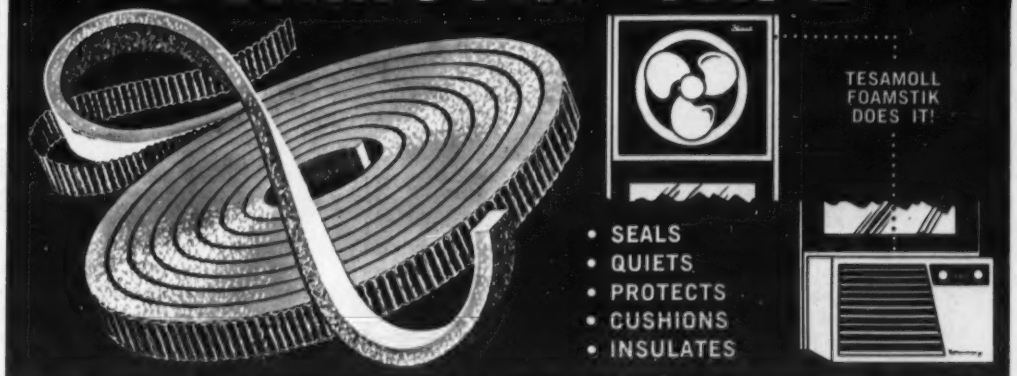

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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

Should I Use Oil Additive?

QUESTION:

We have been rebuilding several makes of sealed units, and lately we have been urged to use oil additives in our rebuilt units. We understand some manufacturers use certain additives, so perhaps we should. We would appreciate your advice.

ANSWER:

Oil additives are not new. One type has been used for many years to retard corrosion. Another, to reduce foaming of the oil in the compressors, has been used for several years.

However, for an oil producer or a compressor manufacturer to use an additive for a specific purpose and under controlled conditions is one thing; but for you to use one or more additives just as a generalized and not very well defined purpose is something else.

The oil producers and the compressor manufacturers have well equipped laboratories manned by experienced and trained chemists. For a particular purpose, they can select just the right additive and they can control just how much to use.

You cannot afford all this expense, and without this definite scientific knowledge, it would be unsafe and very unwise indeed for you to put anything in the oil just because it was supposed to be a "good thing to do."

MANUFACTURER BEST QUALIFIED TO ADVISE ON OIL NEEDS

Why not take advantage of all the expensive equipment and trained chemists that the manufacturers have?

Write to them and ask them for their advice and recommendations.

The manufacturer of the compressor itself is best qualified to determine the character of the oil used in his compressor. He has spent a lot of money to find out. Also he has the background of years of experience with many thousands of his compressors to guide him.

Some manufacturers of sealed units may not approve of your opening and reworking their compressors, so they may not give you the information you want. Some will tell you what oil to use, and you would be wise to follow their recommendations.

Get in touch directly with the maker of the oil that you use. Ask him for his recommendations as to the use of additives. You may possibly find that he is already treating his oil for the very purpose you had in mind.

If an additive should be used, he will be able to tell you what and how much to use, and probably he can put it in the oil for you before he ships it.

Assalone To Be Chairman Of 1960 NISA Convention

ST. LOUIS — Michael E. Assalone, manager and treasurer of Florida Electric Motor Co., Miami, Fla., has accepted the general chairmanship of the 27th annual convention of the National Industrial Service Association, NISA President Horace C. Blenkhorn has recently announced.

The meeting will be held May 4-7, 1960, at the Hotel Fontainebleau in Miami Beach.

NEMA Reports Sales Of Refrigerators, Freezers by States

NEW YORK CITY—The National Electrical Manufacturers Association has issued the following reports on distributors' sales to dealers, by states, of electric household refrigerators and farm and home freezers, and distribution of these products by size of unit, for the first six months of 1959:

DISTRIBUTORS' SALES TO DEALERS, BY STATES*

States	Refrigerators	Freezers
Alabama	1.539	3.447
Alaska	.032	.050
Arizona	.951	.561
Arkansas	.876	1.743
California	11.404	7.942
Colorado	.945	1.011
Connecticut	1.303	.978
Delaware	.213	.218
District of Columbia	1.020	1.054
Florida	4.375	2.866
Georgia	2.154	4.010
Hawaii	.459	.428
Idaho	.408	.617
Illinois	5.450	4.543
Indiana	3.027	3.011
Iowa	1.212	2.105
Kansas	1.017	1.293
Kentucky	1.327	1.768
Louisiana	1.733	2.350
Maine	.394	.392
Maryland	1.442	.961
Massachusetts	2.624	.990
Michigan	4.768	4.060
Minnesota	1.538	1.704
Mississippi	.925	1.754
Missouri	2.494	3.113
Montana	.238	.400
Nebraska	.723	1.120
Nevada	.161	.190
New Hampshire	.278	.169
New Jersey	2.964	2.079
New Mexico	.489	.435
New York	10.014	4.392
North Carolina	2.073	4.398
North Dakota	.218	.446
Ohio	5.028	4.960
Oklahoma	1.359	1.446
Oregon	.927	1.697
Pennsylvania	5.865	4.514
Rhode Island	.426	.139
South Carolina	1.017	2.160
South Dakota	.302	.532
Tennessee	1.631	3.584
Texas	5.948	5.909
Utah	.461	.496
Vermont	.175	.173
Virginia	1.804	2.435
Washington	1.505	2.331
West Virginia	.834	.901
Wisconsin	1.826	2.004
Wyoming	.104	.126
Total U.S.	**100.000**	**100.000**

*Based on Distributors' Sales to Dealers reported to the NEMA Statistical Dept.

TOTAL SALES OF ELECTRIC HOUSEHOLD REFRIGERATORS AND ELECTRIC FARM AND HOME FREEZERS—DISTRIBUTION BY SIZE OF UNIT*

Refrigerators	Per Cent
7 cu. ft. and under	0.3
8 cu. ft.	10.2
9 cu. ft.	7.6
10 cu. ft.	8.8
11 cu. ft.	18.4
12 cu. ft.	26.9
13 cu. ft. and over	27.8
Total	**100.0**

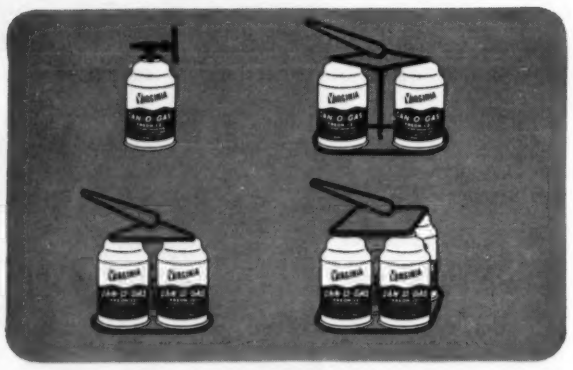
Freezers†	Per Cent
8 cu. ft. and under	3.7
9 - 14 cu. ft.	33.0
15 - 17 cu. ft.	33.5
18 - 19 cu. ft.	10.4
20 cu. ft. and over	19.4
Total	**100.0**

*Based on data reported to the NEMA Statistical Dept.

†Includes 45% for chest and 55% for upright models.

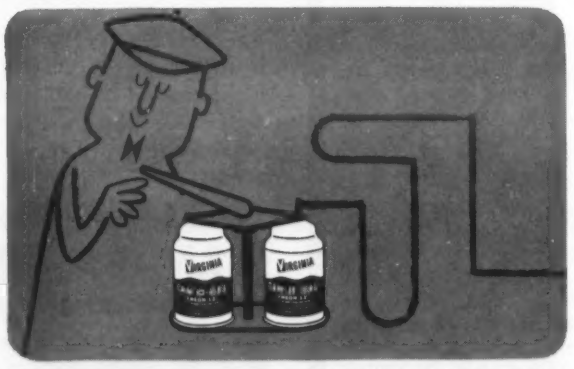
CAN-O-GAS® —wide choice of refrigerants and charge sizes —in handy throwaway cans

Can-O-Gas offers an easy, reliable method of adding critical refrigerant charges when you go out on a job. No cylinders and controls to lug along. No deposits on cylinders—Can-O-Gas comes in small, compact cans you can throw away when empty. Special filling method keeps moisture content low.



"Freon" in a wide variety of preweighed charges is available. Convenient opening devices can be obtained from "Virginia" which will dispense the contents of one, two or three cans simultaneously. Because critical charges are accurate to ±4 grams, Can-O-Gas is ideal for dependable field service.

"Freon-114" and sulfur dioxide are available in 16-oz. cans, "Freon-12" in 15-oz. cans, "Freon-22" in a 2-lb. size and in a new "Virginia" container, a 14-oz. seamless aluminum can. "Virginia," as national sales agent for Du Pont refrigerants, also distributes "Freon" refrigerant in popular cylinder sizes.



Service and maintenance men rely on "Virginia" Can-O-Gas refrigerants for charging water and beverage coolers, freezer cabinets—and for charging automobile air-conditioning systems. For details, write Refrigeration Division, VIRGINIA SMELTING COMPANY, 134 Jefferson St., West Norfolk, Va.

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Honeywell Promotion Program--

(Concluded from Page 1, Col. 4)

interests is to place our primary efforts toward expanding the entire market, with the hope of getting a fair share of new or additional business from this expansion," Wilson said.

Encouraged by Number Of 'Cracks In the Dike'

Wilson stated that 1960 marks the beginning of what should be a golden decade for the heating and air conditioning industry. He added that he is encouraged by a number of "cracks in the dike" that indicate the industry is prepared to meet this challenge.

"Some of the associations are expanding solid, intelligent efforts," he said, "individual companies — manufacturers, wholesalers, utilities, dealers — are coming apace of the modern merchandising methods that are the only answer if we are to compete as an industry for our fair share of the consumer dollar."

Bissel disclosed that Honeywell is using the occasion of its 75th anniversary as a check point for its industry-building activities.

"By this I mean it is a signal to stop and look at ourselves and look ahead to see what we can do better than we have done before," he added.

Bissell emphasized that many of the company's Diamond Jubilee events are distinctly designed to benefit wide segments of the heating and air conditioning industry, with no direct advantages to Honeywell.

"Others are out - and - out Honeywell promotions," he said, "but even in these instances, we feel that each and every one of them can be profitable to others in the industry when aggressively used.

"Fundamentally, they are built to pay off at the point of sale. That's their only mission in life and our only intent. We want to help the manufacturer, the wholesaler and dealer move merchandise, because we know if we help them we will help ourselves."

Experience Has Led To Improved Timing

Both Honeywell executives said the Diamond Jubilee programs are based on experience Honeywell has gained in recent years through sponsorship of a number of other industry-oriented programs.

"One factor," Wilson pointed out, "has emerged bold and clear from our previous efforts, and that is the extreme importance of timing in campaigns of this nature."

He disclosed that many heating and air conditioning manufacturers had allocated their year's promotion budgets to other activities in advance of the unveiling of Honeywell's three 1959 programs last spring.

"Many of them," he said, "voiced regret about not being able to provide more tangible assistance with the words, 'If I'd only known about the Honeywell programs last November . . . ' Well, they're not going to hear about it in November this time, either. It's going to be October!"

During October members of Honeywell's field sales organization are calling on 225 of the nation's leading equipment manufacturers to invite their participation in the Diamond Jubilee programs of direct interest to them.

A total 11,000 35mm. slides, plus slide films and records, are being used by Honeywell sales engineers in making presentations to OEM's. Each manufacturer is shown an opening recorded sequence broadstroking all 10 programs. Then each manufacturer receives greater detail on the programs particularly suited to his business life.

Manufacturers can pick up any of these programs for use in their 1960 campaigns," Bissell said. "That is why we are going to them so early with our presentations — they will have a chance to integrate them into their planning."

'Weather Watch' Radio Program Scheduled

Perhaps the most unusual program is "Weather Watch," a weekend "Monitor" radio show on the NBC network (carried by 200 local stations across the country) designed to focus nationwide consumer attention on heating and air conditioning.

Weather will be forecast three months in advance and, at the same time, homeowners will be advised to make plans for central air conditioning (in spring broadcasts) or have their heating systems checked (in fall).

To make the long-range forecasts, Honeywell has retained the services of Irving P. Krick Associates, Inc., the nation's leading private weather forecasting service.

Honeywell will sponsor a total of three hours of radio time during two six-weeks segments of "Weather Watch"—one segment in the spring of 1960 and another in the fall of that year—with industry-building messages tailored to the approaching cooling or heating seasons.

Equipment manufacturers will enlist the support of their wholesaler and dealer organizations in the Honeywell programs applicable to their business.

All basic costs of the programs are being absorbed by Honeywell. Manufacturers and dealers will assume at-cost responsibilities for some of the custom-tailored folders, booklets or direct-mail pieces used in the various programs.

Electronic Cleaner--

(Concluded from Page 1, Col. 3)

"This field has been virtually untapped and we believe that industry-wide sales of residential electronic air cleaners will approach $75 milion in the next 10 years," Hal Chamberlain, residential market manager, said at an editorial conference here.

Honeywell has been producing commercial electronic air cleaners for more than three years. Recently an addition was made to its Wabash, Ind., plant to expand manufacturing facilities for the commercial units and produce the new home units.

Development of a unit suited for the home market has been going forward for some time.

"WHISPER QUIET" is the descriptive phrase used by Whirlpool Corp. for its new 1960 room air conditioner line consisting of eight models. Sound in the RCA Whirlpool line has been reduced by one half as the result of significant engineering developments, according to Whirlpool.

RCA Whirlpool Room Air Conditioners--

(Concluded from Page 1, Col. 4)

out, is the fact that sonic (sound measurement) tests in Whirlpool laboratories disclose that the highest sound pitch in the new line is well below the lowest level of previous models.

"We have spared no expense," said Larkin, "to make this the highest quality air conditioner line ever produced by Whirlpool Corp.

"For example," the announcement said, "the sturdy, pull-out chassis is reinforced to provide a rigid box-like structure. All steel parts exposed to outdoor elements have been galvanized as additional protection against the deteriorating effects of weather.

"The drain pan now has two run-off hoses rather than one to prevent dripping. All condensate is routed into special non-deteriorating plastic pans rather than depressions in the base of the chassis.

"A special system eliminates outside dripping from the chassis even on the most humid days. All tubing and wiring have been specially bracketed and supported to prevent wear over long periods of use. A new, simple snap-on front provides easy access to the filter."

"The control system," Larkin explained, "has been greatly simplified for ease of operation, and a new exclusive feature is the hidden air director which can be adjusted from the control panel simply by turning a single knob."

Thermostatic control is said to provide "automatic reduction of inside temperature to a cool, comfortable degree, even on the muggiest summer day." A heat pump featured in some models turns the cooler into a room warmer for cold weather use. These units automatically reverse to provide a flow of warm air into the room.

Low, thin design "reduces view obstruction and unsightly overhang."

Available in 1 hp. (five models), 2 hp. (two), and 2¼ hp. (one) in both 115-v. and 230-v. sizes, the new RCA Whirlpool line ranges in weight from 145 to 208 lbs., depending upon the size. Cabinets are cloud gray in color with gray, charcoal, and dark gray trim.

Two through-the-wall room coolers in 1-hp. and 2-hp. sizes, respectively, will be introduced early next year, Larkin said. Both will also feature significant design improvements.

The new Whirlpool lines does not carry suggested list pricings.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

American-Standard

(Concluded from Page 1, Col. 5)

lated product lines, with particular emphasis on expansion in the overseas markets served by American-Standard.

Prior to his new appointment, Andrews was vice president and controller of the Industrial Div. He has been associated with American-Standard since 1950, and served as assistant secretary of the corporation, assistant to the president of the corporation, and vice president of American-Standard Products (Canada) Ltd. before joining the Industrial Div.

The Industrial Div. was formed Jan. 1, 1959, through the merger of three former American-Standard divisions. It produces air conditioning and air handling equipment, fluid drives, and related industrial products.

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Automatic
WATER CONDITIONER

This is the simplest and lowest cost method for eliminating the elements that clog and damage ice cubers and flakers, coffee makers and urns, cooling towers, evaporative condensers, etc.

KARLSONITE*, a water soluble complex phosphate in crystalline form, when automatically fed into the water supply, forms soluble complexes with calcium and magnesium, holds them in suspension and prevents precipitation of these elements. Deposits already formed are redissolved. Karlsonite* also forms inert complexes with iron, copper, nickel, manganese and zinc ions. It is harmless to all metals and prevents corrosion and pitting of metals in zeolite soft water. It is harmless to septic tanks—does not build up organic sludge.

Karlson Automatic Water Conditioner is easily installed, and requires no maintenance except infrequent renewal of the Karlsonite* charge.

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STILES-KARLSONITE CORPORATION
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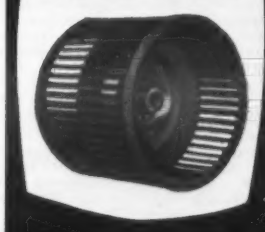
WATER CONDITIONING COMPOUNDS AND EQUIPMENT

NEW!



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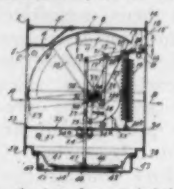
Write For Technical Details

Revcor, INC. 251 EDWARDS STREET CARPENTERSVILLE, ILLINOIS

PATENTS

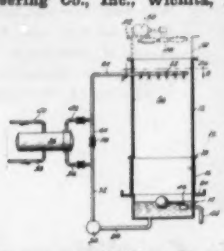
Week of June 2 (Concluded)

2,886,948. STATIC PRESSURE REGULATOR. Bengt Pellmyr and Sven Werner Wallin, Jonkoping, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden.



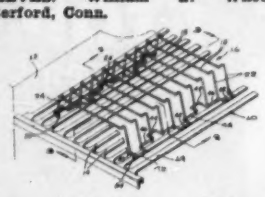
1. In a device for maintaining the static pressure in a distributing duct for the gaseous medium of an air conditioning plant constant relative to ambient pressure, a housing connected to said duct having a generally rectangular free passage area for the flow of the gaseous medium therethrough, throttling means for said medium comprising a bowed damper plate in the form of a partial cylindrical shell. . . .

2889,003. COOLING TOWER. Fred C. Koch, Wichita, Kan., assignor to Koch Engineering Co., Inc., Wichita, Kan.



1. In a combination for cooling liquids, a hollow enclosure having an upper end section the distal end of which is in communication with the surrounding atmosphere, a liquid deentraining, air-permeable section defining a lower peripheral wall portion of said enclosure and comprising a uniform continuation of said upper end section. . . .

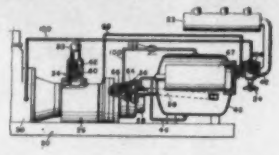
2,889,054. FOOD SEGREGATING RACK FOR REFRIGERATOR SHELVES. William G. Wheeler, Waterford, Conn.



1. In combination, a refrigerator shelf having laterally spaced slots, a good segregating rack resting upon said shelf and comprising a plurality of parallel spaced elongated horizontal cross bars merging at their ends into downwardly extending legs having terminal lower ends. . . .

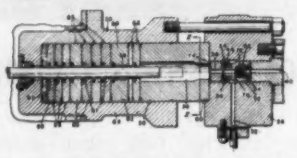
2,889,106. COMPRESSOR UNLOADING SYSTEM. John Le Valley, Painted Post, N. Y., assignor to Ingersoll-Rand Co., New York, N. Y.

1. A compressor unloading system comprising a multi-stage compressor having inlet and discharge openings for the passage of fluid, an inlet valve in said inlet to control the flow of



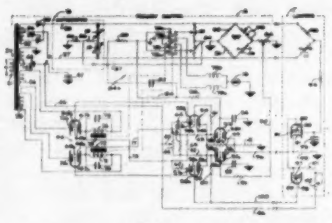
fluid therethrough, a motor connected to the compressor for driving the compressor and having a lubricating system developing pressure when the motor is running, a receiver having an inlet and an outlet. . . .

2,889,108. COMPRESSOR. William Thomas Alderson, Brookside, N. J., assignor to Ingersoll-Rand Co., New York, N. Y.



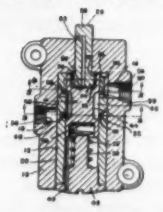
1. A multi-stage gas compressor comprising a low pressure stage and a higher pressure stage in which each of said stages includes a pressure cylinder, a piston reciprocally mounted in the cylinder, a rod connected to actuate the piston and a casing having a bore for the reception of at least one end portion of said cylinder. . . .

2,889,112. ELECTRONIC TEMPERATURE REGULATING APPARATUS. William H. McCormack, Torrance, Calif., assignor to The Garrett Corp., Los Angeles, Calif.



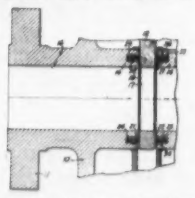
1. In a condition controller; first means for correcting a condition to return it to a predetermined norm from which it has departed; a pair of electronic signal amplifying circuits for controlling said first means, each of said circuits having a control electrode; means coupled to one of said electrodes for impressing a first signal voltage proportional to the departure of said condition from said norm. . . .

2,889,132. GAS PRESSURE OPERATED TRIP VALVE. Harold C. Reynolds, Athens, Pa., assignor to Ingersoll-Rand Co., New York, N. Y.



1. In a gas pressure operated valve, a valve body having a valve chamber therein, an inlet for gas under pressure and an outlet for such gas for said chamber, a valve slidably mounted in said chamber for controlling communication between said inlet and outlet and having a pressure surface on one end thereof. . . .

2,889,134. VALVE CONSTRUCTION. Austin U. Bryant, Walnut Creek, Calif., assignor, by mesne assignments, to Walworth Co., New York, N. Y.



In a valve of the type having a valve body provided with flow passages and a valve member within the body movable in opposite directions between open and closed positions, rigid annular portions forming fixed parts of the body and disposed on opposite sides of the valve member, said portions forming annular metal seating surfaces adjacent the sides faces of the valve member. . . .

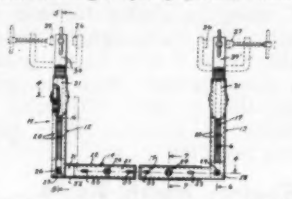
2,889,145. APPARATUS FOR SUPPORTING HOT AIR DUCTS AND THE LIKE. Charles G. Hoffman, Racine, Wis.

2. A hanger for use in the installation of hot air ducts in a building comprising a pair of vertically extending legs, each of said legs including a rear wall, spaced parallel side walls and

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

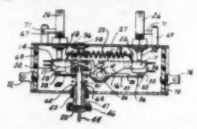
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

inwardly extending flanges defining a guide casing, rack slidably mounted within the legs, spring pressed tooth-



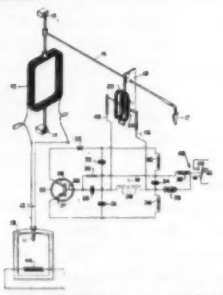
ed latch dogs pivotally carried by the legs for cooperation with the rack bars. . . .

2,889,431. DUAL TEMPERATURE INFINITELY VARIABLE THERMOSTATIC SWITCH. Thomas Edmund Noakes, Detroit, Mich., assignor to American Radiator & Standard Sanitary Corp., New York, N. Y.



1. In a mechanism for actuating sequentially operable devices, a shaft, oppositely directed levers pivotally mounted on said shaft, a switch carried by each of said levers, adjusting screws controlling the angular position of each of said levers, yielding means urging the levers into engagement with said adjusting screws. . . .

2,889,496. ELECTRICAL CONTROL APPARATUS. Warren Moore, Jr., North Hills, Pa., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



9. A vane controller comprising, a selectively operable oscillator responsive to the position of a movable vane, a power sources, a transistor having a base electrode, emitter electrode, and collector electrode, means connecting said power source to said oscillator circuit through the emitter electrode and base electrode path of said transistor, return connection means directly connected between said oscillator and said power source, and control means connecting said power source to the emitter and collector electrodes of said transistor.

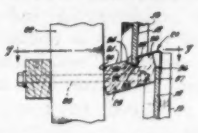
2,889,497. SOLENOID CONSTRUCTION. Forrest R. Wolf, Arlington Heights, and Frank E. Cerveny, Berwyn, Ill., assignors to The Dole Valve Co., Chicago, Ill.

1. In a solenoid construction wherein a coil is wound on a spool formed from electrical insulating material and having a spindle with integral end flanges and terminal lugs secured to the outer side of and extending generally axially outwardly from one of

said end flanges, a split insulating washer on said spindle adjacent to the inner face of the flange carrying said terminal lugs. . . .

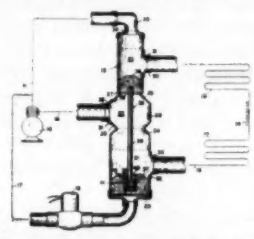
Week of June 9

2,889,584. COOLING TOWER WALL ASSEMBLY. James G. De Flon, Whittier, Calif., assignor to The Fluor Corp., Ltd., Los Angeles, Calif.



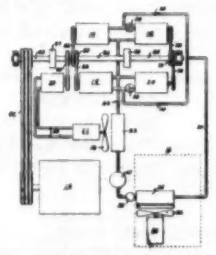
4. An improved cooling tower wall construction, comprising a framework including horizontally spaced columns and vertically spaced substantially parallel supports extending horizontally at the outer sides of said columns, means carried by said supports including horizontally extending vertically spaced rows of upright rectangular panels extending along the upper sides of said supports and projecting upwardly therefrom. . . .

2,889,690. VALVE STRUCTURE. William L. McGrath, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



10. In a refrigeration system including a compressor, a first heat exchange unit, an expansion member, and a second heat exchange unit connected to form a closed circuit for the flow of refrigerant: a valve member for reversing the flow of refrigerant through a portion of the system to interchange the functions of said heat exchange units comprising a body member having two end chambers connected by a central chamber. . . .

2,889,691. REFRIGERATING APPARATUS. Hans O. Schjolin, Birmingham, Mich., assignor to General Motors Corp., Detroit.



1. In combination, an engine, a refrigerant evaporator, a condenser, a plurality of compressors, refrigerant flow means connecting said compressors in parallel refrigerant flow relationship with each other and in series with said condenser and said evaporator, a hydraulic pump, fan means for circulating air in thermal exchange relationship with said condenser. . . .

2,889,692. DEFROST EVAPORATOR STRUCTURE. Thomas A. McGrew, Fern Creek, Ky., assignor to General Electric Co., a corporation of New York.

1. A defrostable refrigerant evaporator structure comprising a vertically arranged roll-forged evaporator having formed therein a refrigerant passage having an inlet and an outlet at the top thereof and a second passage separate from said refrigerant passage, said refrigerant passage in-

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WANTED—INSTALLATION man with initiative and not afraid of work. Reward—Excellent tax free salary and comfortable living in the Tropics. Where—Nassau, Bahamas. Preferred—person with Carrier dealer experience. What to do—Send resume etc., to BOX A6361, Air Conditioning, Heating & Refrigeration News.

DESIGN ENGINEER large appliance manufacturer. Located in Metropolitan New York area will hire engineer with solid background in the design & development of room air conditioners. Should have minimum of 3-5 years' experience including refrigeration air-handling, sheet metal plastics, etc. The job location is conductive to suburban living. Our employees know of this ad. BOX A6366, Air Conditioning, Heating & Refrigeration News.

DESIGN ENGINEER—Position available with progressive midwest firm expanding their operation in the field of commercial type package air conditioning and refrigeration equipment. Graduate engineer with minimum 3 years design experience necessary. All replies confidential. Send full details to BOX A6367, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION FIELD service engineer required by large manufacturer of commercial refrigeration equipment. The position requires travel, servicing of our equipment in large food stores throughout the eastern seaboard. Applicants should have previous experience in refrigeration service work of commercial equipment. Position offers opportunities for advancement with progressive company. Liberal employee benefits. Salary commensurate with experience. Reply in confidence to BOX A6369, Air Conditioning Heating & Refrigeration News.

EQUIPMENT WANTED

SURPLUS PARTS wanted. Pay cash. Compressors, valve plates, and parts for all makes. New or used and repairable. Brunner, Copeland, Carrier, Copelametic, General Electric, Universal and others. Send full description as to Model No., Part No., Horse-power, etc. UNITED REFRIGERATION CORPORATION, 514 W. 12th St., Los Angeles 15, Calif.

EQUIPMENT FOR SALE

300,000 B.T.U.—$475.00, horizontal unit heater with 2-row steam coil; double centrifugal fans provide up to 6,000 C.F.M. @ 1½" total static pressure; motor, filter racks, freight extra—other sizes & coils. MAUER ELECTRIC CO., Liberty, New York.

FOR SALE: Air conditioning 2 hp. hermetic compressors—Model HB200 230 V. 60 cy. 1/phase F-22. Complete with electrical "Power Pack". $79.00 ea. F.O.B. Chicago, Illinois, WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

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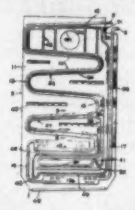
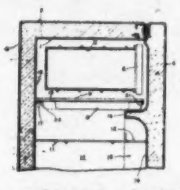
cluding a serpentine conduit portion, an accumulator portion below said serpentine portion and a vertical passage



adjacent one edge of said evaporator terminating in said refrigerant passage outlet. . . .

2,889,693. REFRIGERATOR INCLUDING AIR CIRCULATOR CONTROL MEANS. Victor J. Kurowski, Louisville, Ky., assignor to General Electric Co., a corporation of New York.

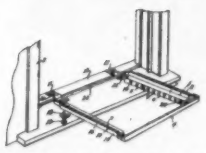


1. In a refrigerator having a cabinet including a rear wall, and an access opening at the front of said cabinet, a door for closing said access opening including a horizontally extending ledge projecting into said cabinet, an evaporator in the upper portion of said cabinet above said ledge, a chiller tray slidably supported below said evaporator for dividing said cabinet into an upper freezer compartment and a lower foor storage compartment. . . .

2,889,694. REFRIGERANT PLATES. Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Co., Chicago, Ill.

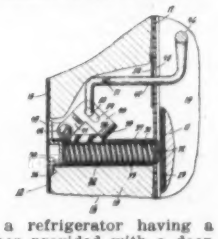
1. In a sheet metal plate for refrigeration and the like, a generally flat sheet metal plate side wall, a second plate side wall spaced therefrom and generally parallel therewith, edge walls connecting said side walls and sealed thereto to form a gas-tight enclosure about the interior of the plate thus formed. . . .

2,889,764. SELF-CONTAINED AIR CONDITIONING UNIT INSTALLATIONS. William L. McGrath and Francis D. Stevens, Syracuse, N. Y., assignors to Carrier Corp., Syracuse, N. Y.



1. In combination of a self-contained air conditioning unit placed within a building opening, support means for the unit comprising two arms protruding exteriorly of the opening, each arm terminating in a horizontally extending flange secured to a portion of the opening wall, each arm including a substantially horizontally extending first portion on which the unit rests. . . .

2,889,787. DOOR OPENER. Carl M. Schell, Dayton, Ohio, assignor to General Motors Corp., Detroit.



In a refrigerator having a cabinet member provided with a door member and a latch of the type which is released merely by applying a pull on the door member; mechanism for opening said latched shut door member comprising; means on one of said members capable of storing a door pushing energy therein of sufficient force to forcefully release said latch and open said door member; said means comprising a guide cylinder extending transversely of said door member, a plunger slidably supported in said guide cylinder and movable toward said cabinet member, and a spring urging said plunger outwardly. . . .

(To Be Continued)

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

Like the preceding three volumes in this series (which are available in handy manual form), these articles are intended for the *experienced* refrigeration mechanic, not the novice, and are primarily designed to assist in emergency service.

Detailed step-by-step instructions on adjustment and replacement procedures are purposely omitted, partly to discourage the "do-it-yourself" clan and partly because major repair jobs for the most part will be performed by authorized service agencies of the manufacturers without whose cooperation this series could not have been written.

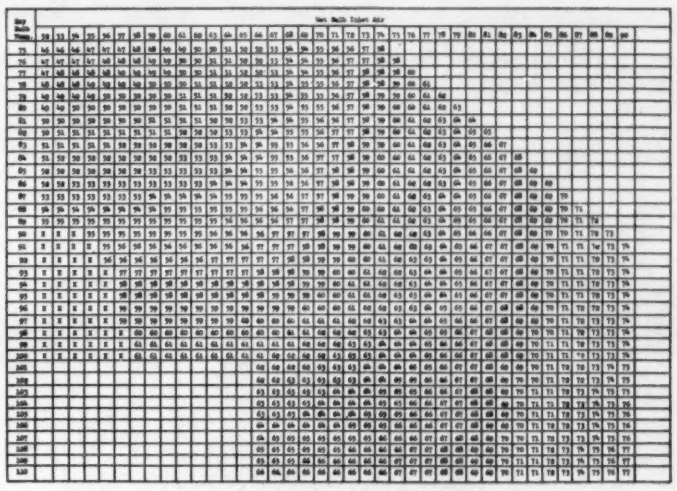


FIG. 10—Basic performance chart for checking 1959 Chrysler systems.

Table 1—Outlet Temperature Differences from Performance Chart

Installation Combination	Temperature Difference Short Wheelbase	Long Wheelbase
Front unit only	Chart (no variation)	Chart —1° F.
Front unit of dual	Chart +2° F.	Chart —1° F.
Rear unit only	Chart (no variation)	Chart —1° F.
Rear unit of dual	Chart —3° F.	Chart —4° F.
Roof unit of dual	Chart +5° F.	Chart +4° F.

CHRYSLER (4)

Chrysler Corp.
Detroit 31, Mich.

Performance Tests

To determine if a system is performing satisfactorily, the following test procedures have been established by Chrysler.

Test is conducted with car windows open, hood down, engine operating at 1,250 r.p.m., fresh air damper open, blower on high, temperature control lever in "off" position, damper control set so 50% of air is delivered to outlets on instrument panel and 50% to floor outlets, and discharge pressure maintained between 190 and 210 p.s.i.g.

To obtained this pressure it may be necessary to partially block the condenser (to raise pressure) or place a fan in front of condenser (to lower pressure).

Front unit of dual systems is checked with blowers of trunk or roof unit off.

Trunk or roof units of dual systems are checked with the front unit off, which requires a jumper wire from positive terminal of battery to clutch lead to operate system.

With dual systems check the front unit first, then the trunk or roof unit.

In checking front unit place a psychrometer at cowl air intake to determine both dry and wet bulb temperatures. In checking trunk and roof units the psychrometer is placed at intake grille of unit.

Outlet temperature is measured at right-hand outlet grille of front unit, right-hand (curb side) outlet of trunk unit, and forward right-hand (curb side) outlet of roof unit.

System should be operated 15 minutes before checking temperatures.

Maximum outlet temperatures, if the system is operating correctly, should not exceed those listed in Fig. 10, except as noted in Table 1.

Chart in Fig. 10 applies specifically to installations of single front or trunk units in "short wheelbase" cars. Chrysler defines its "short wheelbase" 1959 cars as Plymouth, Dodge, DeSoto Firesweep, and Chrysler Windsor; its "long wheelbase" 1959 cars as DeSoto Firedome and Fireflite, Chrysler Saratoga and New Yorker, and Imperial.

Permitted variations in outlet temperatures from Fig. 10 for the various cars and combinations of units are listed in Table 1.

If the outlet temperature exceeds the recommended figure, it could be caused by poor contact of expansion valve bulb, poor compressor capacity, faulty superheat setting of expansion valve, or other factors.

Thermostat Test

De-icing thermostat should cut out and de-energize clutch and compressor when suction pressure drops to between 18 and 24 p.s.i.g. Thermostat should cut in when suction pressure rises above 24 to 30 p.s.i.g.

If suction pressure (with blowers disconnected) drops below 15 p.s.i.g. before clutch disengages, there is probably a bad contact between sensing element of thermostat and the evaporator.

If suction pressure drops below 10 p.s.i.g. without de-energizing the clutch, the thermostat wires may be shorted or the thermostat may be faulty.

Trouble Shooting

Basic refrigeration cycle of the 1959 Chrysler air conditioning systems is conventional, so there should be no unusual service problems encountered here.

Use of dampers positioned by vacuum diaphragms and use of the by-pass and reheat system to control temperatures could create additional service problems, however.

If the dampers are not positioned correctly, satisfactory cooling (or heating) may not result. Likewise, for example, if the hot water valve should fail to close completely, maximum cooling could not be obtained.

These other possibilities, therefore, must be considered in addition to the usual problems such as clogged condenser, incorrect refrigerant charge, restricted lines, etc., etc.

Editor's Note: Next make auto air conditioner to be discussed will be Mark IV.

Snap-Tite's '15 Series' Described In Catalog

UNION CITY, Pa.—Features of Snap-Tite's new "15 Series" of quick connect-quick disconnect valved couplings are described in a four-page catalog (No. 280B) published by Snap-Tite, Inc., here.

The couplings are available in ¼ in., ⅜ in., ½ in., ¾ in., 1 in., and 1¼ in. sizes.

Snap-Tite's "15 Series" couplings also may be used with fuels and other fluids with working pressure up to 3,000 p.s.i, and temperatures up to 400° F. in the ¼ in. size. Variations of the units also have been designed to meet special coupling situations, such as remote operation and handling of liquefied gases.

Cutaway drawings, complete dimensional data, and selections of end threadings for six sizes of the "15 Series" couplings included in the illustrated cattlog. Various accessory items also are illustrated and detailed.

Copies of the catalog, No. 280B, may be obtained by writing to Snap-Tite, Inc., Union City, Pa.

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MARSH Refrigeration Instruments

Penn Controls Names Carnahan, Myers

GOSHEN, Ind. — Ralph S. Penn, president of Penn Controls, Inc., has announced the appointment of H. M. Carnahan and George S. Myers to new posts of vice presidents.

Carnahan

Myers

Carnahan is now vice president — director of sales. He first joined Penn in 1957 as director of sales, being responsible for all Penn sales activities, both foreign and domestic. Carnahan's business career includes 22 years in the heating and air conditioning industry, most of this time with American-Standard where he was vice president in charge of sales for its Sunbeam Div.

Myers, now vice president—director of manufacturing, joined Penn in 1954 as director of manufacturing. He came from the Perfect Circle Corp. where he was works manager.

ARW Sales Clinic--

(Concluded from Page 1, Col. 3)

the program under way when he delivers the keynote address following the "Kickoff" Luncheon" on Sunday, Nov. 1. Nereim has spoken to hundreds of groups throughout the country selling sales ideas, it was noted by Paul Bodwell, Jr., convention chairman.

Gene Flack of Sunshine Biscuits, Inc., who had been scheduled to make the keynote address, has been forced to cancel his appearance due to illness.

The sales clinic will be held Monday morning, Nov. 2, with W. C. Miessemer, ARW vice president, presiding. Cecil O. Dudley, a Columbus sales specialist, will present the clinic "beamed to the sales of the products of our industry," it was announced. "His 'Steps to the Sale' presentation, we believe, will benefit the manufacturer-wholesaler team."

"Each participant in the sales clinic will have an individual work packet prepared in advance. For this reason those wishing to attend must register in advance." Deadline for advance registration is Oct. 20.

Preceding the convention, board of directors' meetings will be held Oct. 30 and the next morning. Registration starts that afternoon (Oct. 31) and will continue Sunday, Nov. 1.

The Kickoff Luncheon will start at noon Sunday, with Bodwell presiding. Chas. G. Koopman, ARW president, will present welcoming remarks, after which Nereim will speak on "Now Is the Time."

Other events scheduled for Sunday are the annual business meeting in the afternoon, and the officers reception and annual banquet in the evening. Koopman will preside at the banquet and E. Peter Sorensen, ARW secretary, will present awards.

NWAHACA Convention Plans--

(Concluded from Page 1, Col. 5)

John Norris, president of Lennox Industries, Inc., will present the viewpoint of the ducted air heating and cooling industry on electric heat.

He will be followed by Edwin O. George, vice president of the Detroit Edison Co. and chairman of the sales division executive committee of the Edison Electric Institute. George will describe the plans and attitude of the electric industry with respect to electric heating.

Convention business will officially begin Wednesday afternoon. Byrd will describe NWAHACA's accomplishments during 1959.

Research activities and findings will be summarized by Keith T. Davis, chairman of the association's Research Advisory Council, and Edward J. Brown, head of the NWAHACA research staff at the University of Illinois.

Prof. Lorin G. Miller, chairman of the Application Engineering Council, will report on educational activities and accomplishments.

Marketing impact and activities of the association will be covered in a report by Robert V. Main, chairman of the Marketing Council.

Thursday afternoon's session will be divided into two simultaneous programs. One will feature subjects of interest to manufacturers and wholesalers and the other subjects of interest to dealer-contractors.

At the manufacturer-wholesaler session, Dr. George C. Smith, vice president of F. W. Dodge Corp., will offer residential construction forecasts.

Carl T. Arlt, assistant vice president of the Federal Reserve Bank of St. Louis, will analyze money market trends, credit, and availability.

Curtis C. Williams, Jr., NWAHACA general counsel, will cover taxation laws and their effect on business.

William H. Ayers, Congressman from Ohio, will speak on labor legislation. He is a member of the House education and labor committee.

Theme of the dealer-contractor session will be "How To Obtain Competent Sales Personnel." Recruiting new salesmen will be covered by a representative of Trundle Consultants, Inc., Cleveland specialists in business management.

Training the new salesman will be discussed by Newt T. Hess, a member of the dealer training committee of the association's Marketing Council.

Compensating the new salesmen is the subject of Ray Horan, manager of Janitrol's Institute of Dealer Management Training.

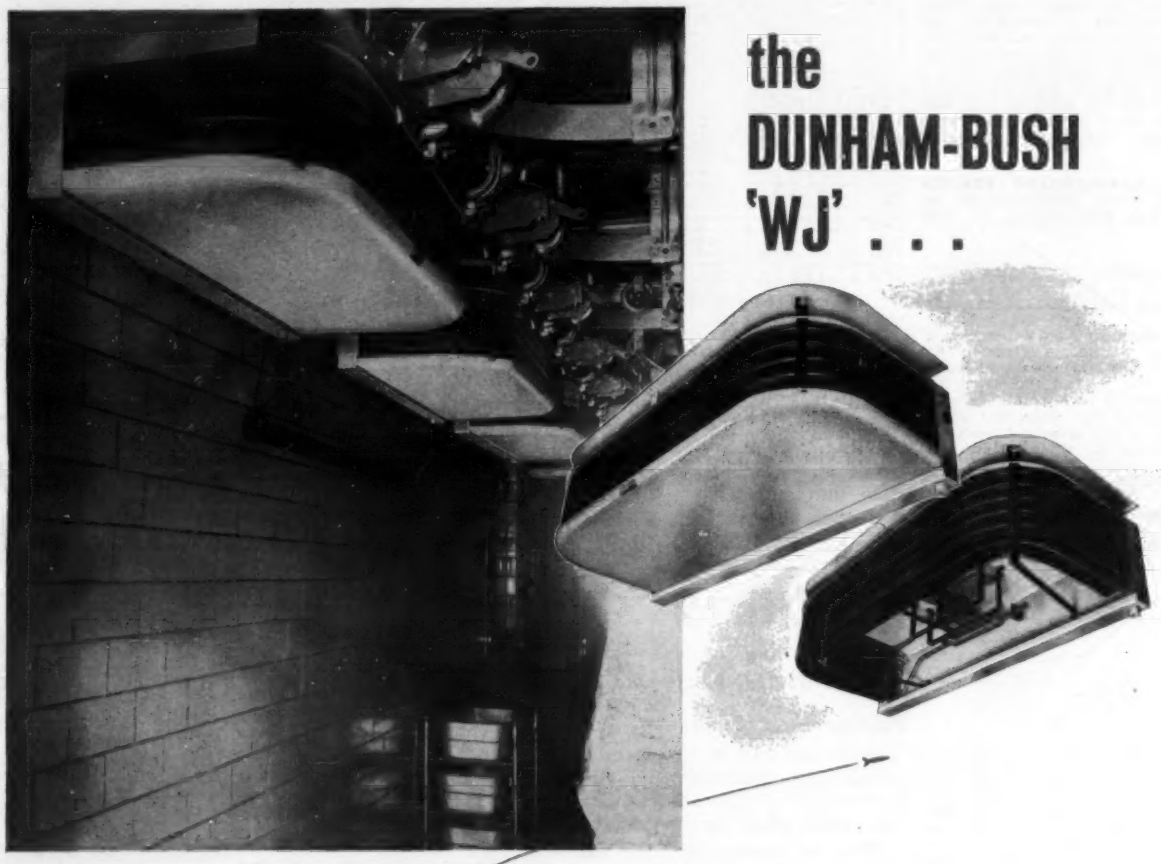
Theme of the Friday morning session will be "How to Prepare for Profitable Sales."

Mechanical Engineer Gary J. Baker, assistant director of technical services of NWAHACA will discuss "How To Make the Preliminary Survey."

William L. Dulle, vice president of E. E. Souther Iron Co., St. Louis, will describe "Preparation of Cost Estimates."

J. P. Field, vice president and manager of the Light Sheet Metal Div., the Williamson Co., will tell "How To Sell the Quality System."

Friday afternoon, Herbert T. Gilkey, director of technical services for NWAHACA, will discuss application engineering of the system. Other speakers are to be announced.



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As up-to-date as our jet and missile age is the 'WJ' line of unit coolers . . . offering user and installer a rich profusion of features that enables the 'WJ' to satisfy the ultimate in design and performance demands.

Draw-through type air distribution makes it possible to clean the coil and special sawdust screen *from the outside*. Air movement is along the ceiling and walls, *away from the product*, preventing air blast drying yet ensuring proper cooling. A split full-size drain pan makes internal parts fully accessible, *without disconnecting the drain lines*. And, advantageously, the 'WJ' is ideally suited to installation at the juncture of wall and ceiling, *thereby using very little valuable storage space*.

The 'WJ' is available in seven sizes ranging from 3500-24,000 Btu/hr (at 10° TD). Additional construction features include plate type serrated fins, tubing sized according to loading, and baked white enamel casings. For full details, contact the Dunham-Bush sales engineer near you.

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